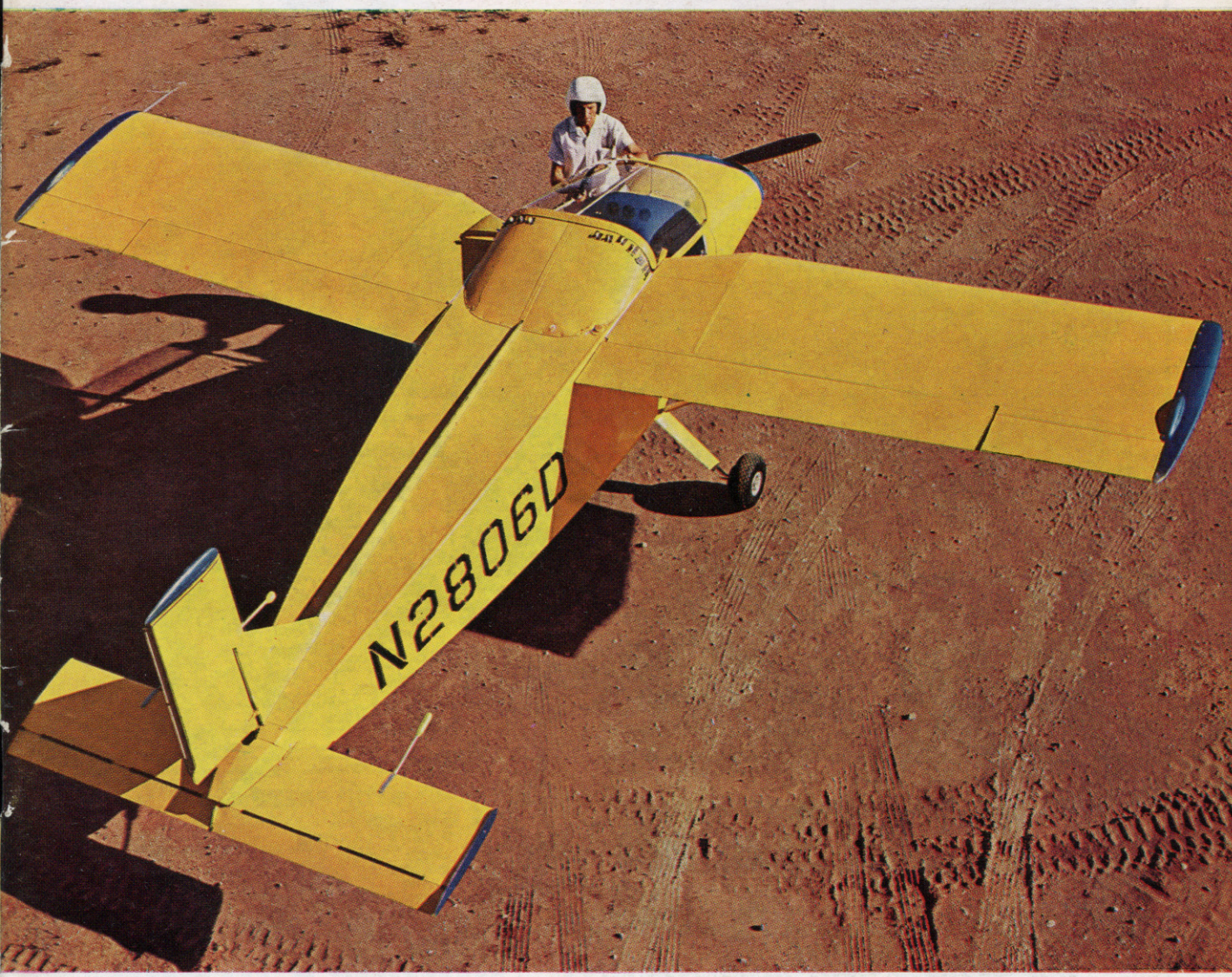
AIRFIX magazine

FOR PLASTIC MODELLERS

JANUARY, 1968

2s

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* Defiant TT3 and 'Warspite' conversions

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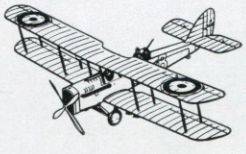
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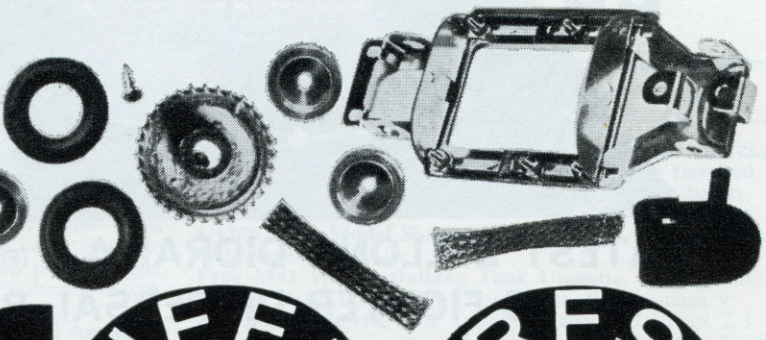
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1:32 scale

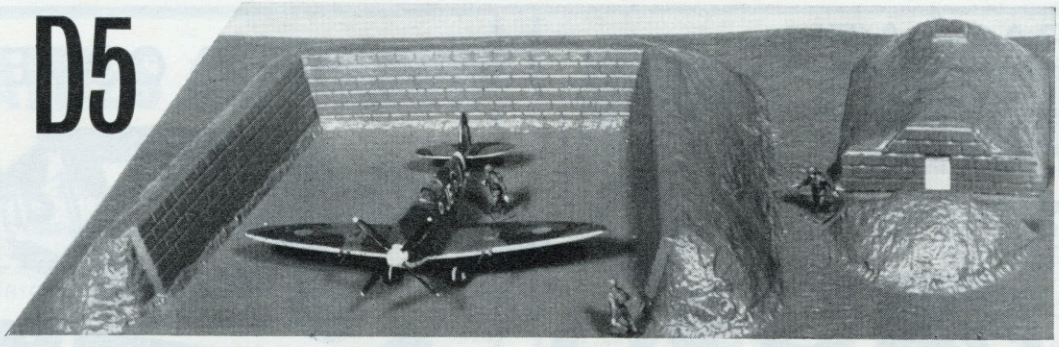
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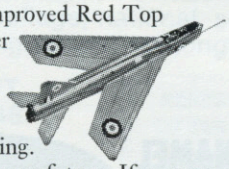
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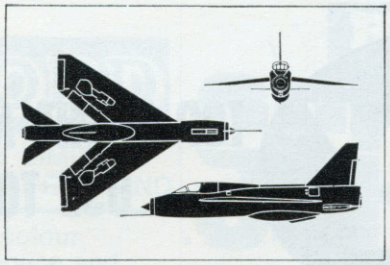
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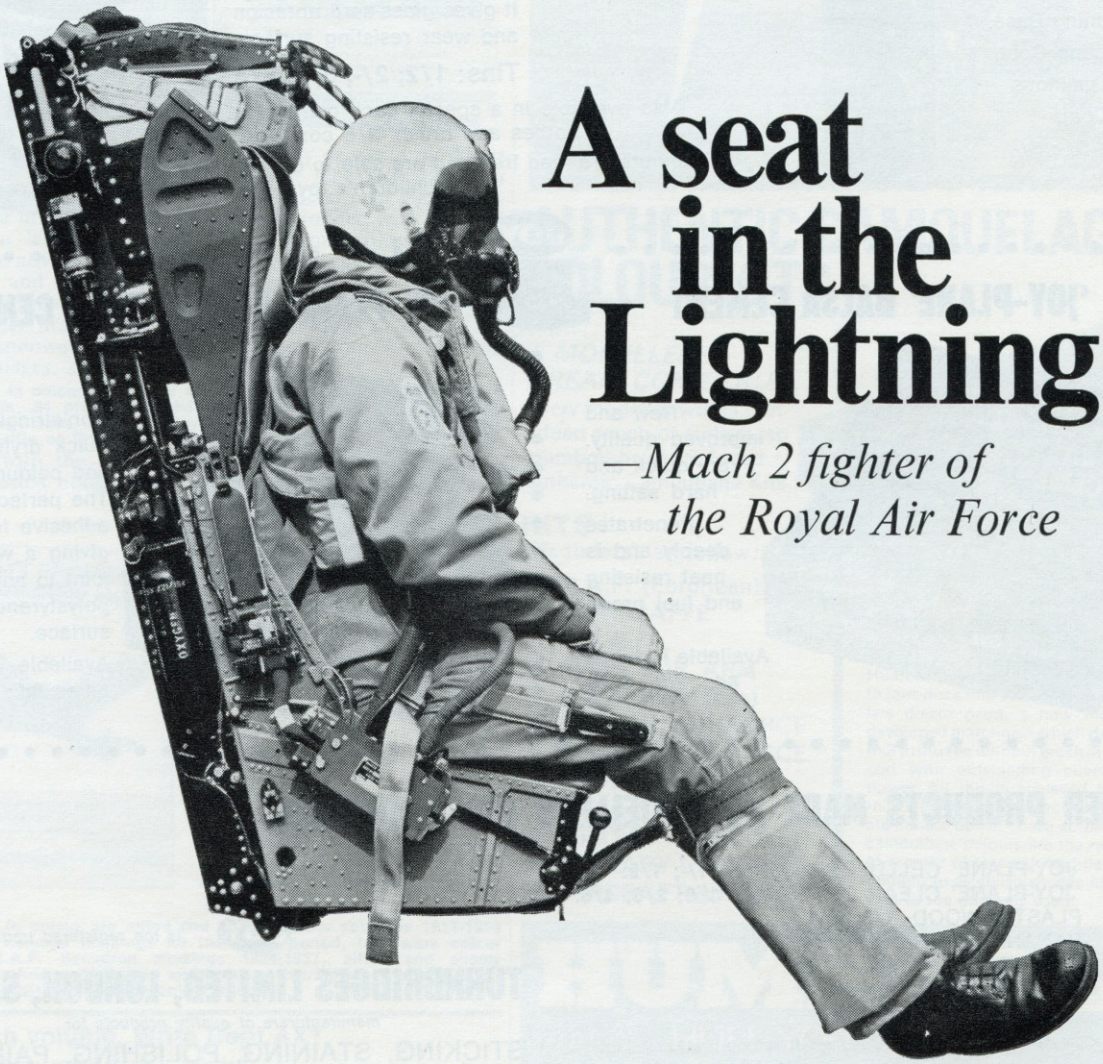
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AIRFIX FOR PLASTIC MODELLERS

Volume 9, Number 5

magazine

January, 1968

IN THIS ISSUE

NEWS FROM AIRFIX	Heinkel He 177, *Cutty Sark,* F-111A, and 007 WA-116 autogyro kits released	170
THE CHURCHILL TANK	More special purpose variants by **Peter Chamberlain**	171
MILITARY MODELLING	**Chris Ellis** makes the M12 SP gun from a Sherman kit	172
IN THE AIR	A visit to US Air National Guard units by **Alan W. Hall**	174
DEFIANT TT3	**Alan W. Hall** converts the Airfix Defiant to its target-tug variant	175
US CIVIL WAR	Medical and other departments modelled by **Michael Blake**	178
A TRAM IN 1:32 SCALE	**Norman Simmons** adapts Airfix 'B' Type bus kit parts	180
HALT!	Simple model for large or small layouts by **Michael Andress**	182
'WARSPITE' AS SHE WAS	**Ian Whitehead** alters the Airfix kit to Jutland configuration	184
THE CODAR 400X	A new electronic railway control system tested by **Bert Lamkin**	186
HOUSEHOLD BRIGADE OF 1830	**J. S. R. Mead** with more Airfix figure conversions	187
FIGHTING COLOURS	Camouflage schemes of 1941 described by **Michael J. F. Bowyer**	188
MOTORISING THE DB5	**Geoff Snell** provides power for the Airfix Aston Martin	193
NEW KITS AND MODELS	Latest releases of interest to modellers	194
LETTERS TO THE EDITOR	The page where your views and ideas can win you a free Airfix kit	197
PHOTOPAGE	Rare pictures from readers include a Sunderland and Walrus	199

COVER PICTURE

One of the few 'home-built' aircraft to achieve production status in post-war years was Bjorn Andreasson's handsome little BA-7 which first flew in October 1958. This basic design was subsequently developed into Malmo Flygindustri's MFI-9 Junior and MFI-9B Trainer. Bölkow had built more than 150 of these under licence in Germany by mid-1967.
(Illustration courtesy of AIR BP, the Journal of the International Aviation Service of the British Petroleum Co Ltd, London)

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Editor CHRIS ELLIS

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NEWS FROM AIRFIX

The world's greatest value in construction kits

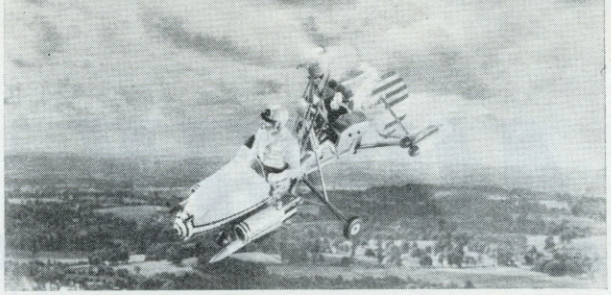
- **Heinkel He 177A-5**
- **007 Wallis WA-116 Autogyro**
- **'Cutty Sark' clipper ship**
- **General Dynamics F-111A**



A 1:72 scale Heinkel He 177 is the latest World War 2 bomber model to be added to the Airfix range of constant scale construction kits. This is a faithful replica of one of the most ingenious German aircraft to appear in the 1939-45 conflict, and it was the only German heavy bomber to go into quantity production. Known as the Grief (Griffon), it also had a fearsome reputation for the men who flew it, since more He 177s were lost in accidents than in combat.

The He 177 dated from 1938 when a specification was issued for a heavy reconnaisance/anti-shipping bomber with a 4,000 mile-plus range. Heinkel's design had a top speed of 340 mph, faster than many contemporary fighters. Novel feature of the machine was its coupled engines, two being mounted side by side in each nacelle. Existing power plants could thus be used, obviating the need to develop heavier units, though this engine arrangement was ultimately the cause of many of the Griffon's technical troubles.

The Airfix kit, which has 166 parts, represents the He 177 A-5 variant, of which over 700 actual examples were produced in 1943-44. This version could carry up to 13,000 lb of bombs and could also carry the Hs 293 radio controlled bomb, one of the first air-to-surface missiles to be used operationally. Three replicas of this missile are included in the kit for optional fitting to the model. There are also dummy 550 lb and 1100 lb bombs to represent the aircraft's more conventional bomb-load, and bomb-bay doors are provided in the closed or open positions for fitting to choice. Other details include five crew members, rotating guns and turrets, hinged ailerons complete with balances, hinged rudder and a matt transfer sheet. Slot for the display stand on this model is covered by a thin web of plastic which can easily be pushed out by anyone desiring to mount the model. A series 5 kit, the Airfix He 177 costs 8s 6d.



Above: *Wallis WA-116 autogyro in 1:24 scale.*

THE first Airfix autogyro model is a perfect scale replica of the tiny Wallis WA-116 which featured in spectacular flying sequences in the Bond film 'You Only Live Twice'. This particular machine, G-ARZB, was actually flown in the film sequences by its inventor, Wing Commander K. H. Wallis, who doubled for Bond in this part of the film. For its film role, the WA-116 was fitted with some exotic 'weapons' for aerial combat, including flame-thrower packs, rockets, aerial mines, and machine guns. All these are included in the Airfix kit which contains full detail on the instruction sheet of the colour scheme carried by the aircraft in the film.

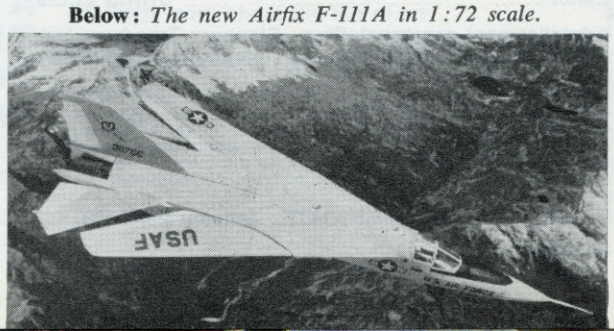
As an alternative to the Bond version, the Airfix WA-116 can be completed as a standard Wallis autogyro, simply by omission of the offensive armament. Detail in the kit includes a pilot figure, a detailed McCulloch two-stroke engine, pilot's controls, and rotor supports for when the machine is parked on the ground. To match the 007 Aston Martin, Airfix have chosen 1:24 scale as most suitable for the model. Price of the Airfix WA-116 Bond autogyro kit is 5s.

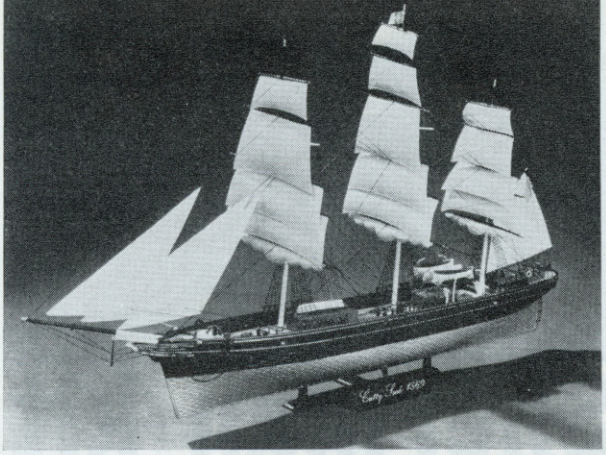
THE immortal clipper ship *Cutty Sark* is the latest series 9 'Classic' ship kit in the Airfix range, and in true Airfix tradition this is a giant model nearly 18 inches long and containing 220 parts plus optional vacuum-formed sails.

Representing the peak of clipper ship design, *Cutty Sark* is one of the few vessels of the great days of sail to be preserved and she is now in dry dock at Greenwich and open to the public both as a museum and a seamanship school. Named after the chemise worn by Burns' witch Nannie, *Cutty Sark* was built on the Clyde in 1869 for Captain John Willis, expressly to outsail the clipper *Thermopylae* launched the previous year by a rival. She had iron frames and wood planking, with no expense spared in materials. Only 212 feet long, she carried 32,000 square feet of sail giving a speed of as much as 17 knots in a good wind. Like the other clippers, she was built expressly for the China tea trade, a good speed being essential for the 'race' to get to Britain first with the cargo and so command the best prices in the tea market.

In 1895 she became no longer competitive with the

Below: *The new Airfix F-111A in 1:72 scale.*





Above: *Magnificent new* Cutty Sark *kit from Airfix.*

steamers and the more modern barques and went to a Portuguese company as a 'tramp' ship until being re-purchased for Britain in 1922 by a retired sailing master. Subsequently she was re-rigged and used as a training ship until preservation in 1957.

A vast amount of fine detailing on the Airfix model does full justice to the memory of this fine ship, and includes deadeyes, deckhouses, davits, lifeboats and oars, bitts, steering wheel, windlasses, pump, ladders, and even a tiny signal cannon. Masts and yards are modelled in their entirety and there are pre-formed ratlines and a rigging diagram for those who wish to add the braces, stays, and halyards. A detailed instruction sheet, display stand, houseflag, and Red Ensign complete the kit, which costs 19s 6d.

●

ALTHOUGH delivery dates for the RAF's own F-111 swing-wing aircraft may be in doubt, the British 1:72 scale version—made by Airfix—is already streaming off the production line at the firm's London factory.

The variable geometry (swing-wing) of the F-111 aircraft is demonstrated by the linked movable wings of the model. The completed kit's wingspan adjusts from 10½ inches down to 6 inches and from nose probe to tail fairings, the model measures 13 inches. The rocket-powered cockpit capsule, designed to solve the problem of escape at Mach 2.5 is detachable from the model. Many other intricate details of the aircraft are embodied in the kit.

Construction of the Airfix F-111 kit is made simple by detailed illustrated instructions. Painting directions and USAF transfer markings are included. The kit is priced at 7s.

NEWS FROM IPMS

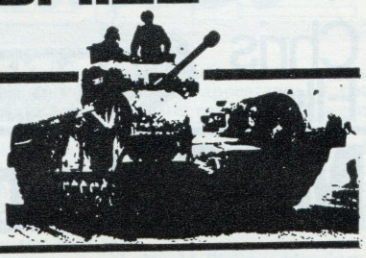
THE first IPMS National Modelling Contest was held at Maple & Co's Restaurant on November 25, 1967. The large number of members and friends who attended were able to inspect closely a magnificent selection of plastic models. The Society was fortunate to secure the services of Air Cdre Wheeler, William Green, and Chris Ellis to undertake the difficult task of judging the models.

Following a remarkable film show by Eddie Creek and a Buffet Supper, Air Cdre Wheeler presented awards to the various class winners. The Premier Award was to Fred Henderson for a truly outstanding model of a Bristol Bulldog complete with Hucks Starter.

The next meeting of the London Area Branch will be at 7.30 pm on Friday, December 29, at St Mark's Church Hall, Balderton Street, London, W1.—*L.G.V.*

THE CHURCHILL TANK

by Peter Chamberlain



PART 7

SPECIAL PURPOSE VARIANTS

TO enable obstacles to be breached or demolished, and at the same time give maximum protection to the demolition personnel, a series of Mechanical Charge Placers were evolved and experimented with. These methods suspended explosive charges on frames mounted in front of the tank for placing in front or across the obstacles to be demolished. Because of its heavy armour, stable chassis, and adoption as the standard AVRE, the Churchill was the carrier vehicle used for almost all British developed explosive charge devices.

The Light Carrot: Developed in July, 1942, this was a name given to an elongated rectangular explosive charge carried on a frame mounted on the nose of the tank so that it could be positioned against the object to be breached and fired from within the tank without exposure of the tank crew. Charges from 12 lb to a maximum of 25 lb could be carried on these extended brackets without danger to the crew.

Trials were also carried out with heavier charges up to 660 lb mounted on the top front frame of the Anti-Mine Roller Attachment (AMRA Ia) device fitted to the Matilda tank; this device was known as the Heavy Carrot.

Onion (Jones Onion): Developed in August, 1942, this device consisted of explosive charges fitted to a framework attached to the front of the tank. The framework measured 9 feet wide by 4 ft 6 inches high. It was carried vertically by two side arms attached one each side of the vehicle. When the tank with the explosive device arrived at the obstacle to be attacked a mechanical release cable was pulled allowing the frame of charges to fall. A pair of cranked legs pivoted to the frame met the ground first, so that the frame fell forward and was retained against the obstacle. The tank was then reversed away and the charges fired electrically by a trailing cable. Trials were also made with a similar smaller device, this being known as the Single Onion.

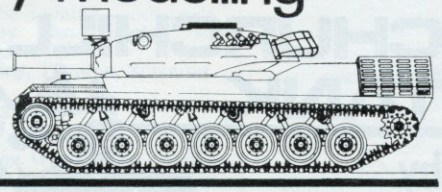
Quinson Device: This was another form of explosive frame for hanging on an obstacle and was carried vertically on two side arms attached one each side of the vehicle.

Goat Mk III: A further development of the Carrot and Onion devices. The Goat was carried horizontally in the front of the tank and was so designed that contact with a wall or obstacle automatically placed the explosive frame into position. This device was put under development in

Continued on page 173

Military Modelling

by Chris Ellis





M12 from a Sherman kit

COMBINING parts from two or more kits and models to produce a third variation on the basic theme is a trick well-known to military converters, and this month's AFV model, the M12 Gun Motor Carriage or self-propelled 155 mm gun which was built on the Sherman chassis is a classic example of the possibilities. Apart from the Airfix Sherman kit, you'll need the remains of the Roco M40 SP gun, the chassis of which was utilised in our May, 1967, issue to provide a HVSS suspension for the Sherman. This conversion would leave you with the entire superstructure and gun of the M40 and thus provide the necessary components for M12 which was, in fact, the M40's predecessor in service.

Start by assembling the Sherman suspension and lower chassis following stages 1-10 of the kit instructions. Then take the hull top, part 43, and saw away the nose and glacis plate in one piece, cutting the glacis to match the nose width and removing the entire section immediately in front of the driver's raised hatch sections. Make a saw cut half way through the glacis plate immediately behind the moulded bolt line, where it joins the nose moulding, and bend the glacis very carefully to give a 20 degree angle—easily measured against a transparent protractor. Then cement the nose/glacis in its usual place.

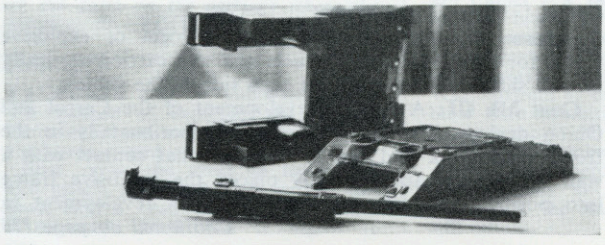
Next take the Roco M40 superstructure and carefully snap the 155 mm gun out of its trunnions and put to one side. Turn the superstructure upside down and, using a razor saw, simply cut out the entire fighting compartment floor, using the *inside* edges of the mould lines which mark its outline as a guide for cutting. The front bulkhead of the fighting compartment must also be cut away at the same time, as also must the tiny step on the rear of the floor moulding. You should now find that the ex-M40 floor fits exactly into the rear of the Sherman chassis, with the rear edge cementing to the rear edge of the chassis and the side edges cementing inside the chassis sides; it may be necessary to file or trim a little to achieve a perfect fit. Before finally cementing in place, trim the 'horns' from the tops of the trunnion arms and file and trim to give circular tops, as shown in the sketch. Snap the gun back into place and test for traverse and elevation It should not have been necessary to remove the trunnions at all during this work.

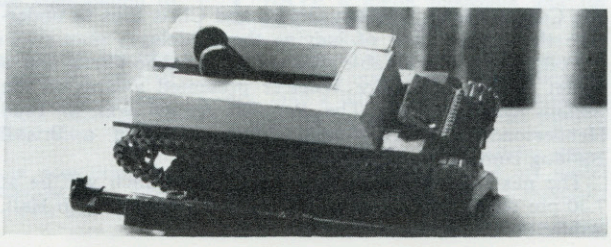
Remainder of the conversion now concerns the superstructure which can be made from plastic sheet or card. It looks complicated, but if divided into three sections it becomes nothing more than a simple operation in cementing up plastic card 'boxes'. Tackle the two long sides first. That on the left hand side measures 46 mm long, 7 mm high, and 6 mm wide. Thus you require two pieces 46 mm × 7 mm (sides), one piece 46 mm × 6 mm (top) and two pieces 7 mm × 6 mm (ends). Cement this structure in place straight on to the top face of the chassis side pieces (part 4). Then make up a similar structure on the other chassis side (part 24) using identical dimensions except that the lower edges of the plastic card side pieces should be 48 mm long, thus giving a sloping leading face to the structure. The sketch should make this clear. Third plastic card structure is the driving cab which fits between the right and left superstructure sides at the front end. The front face is simply an 18 mm wide × 8 mm deep rectangle of card cemented across the gap to match the sloping face of the right hand superstructure. The top is an 18 mm × 8 mm rectangle, and the back is an 18 mm × 10 mm rectangle. This leaves a tiny triangular gap at the front right edge, caused by the rectangular shape of the right hand superstructure, and this is filled in with a tiny sliver of card.

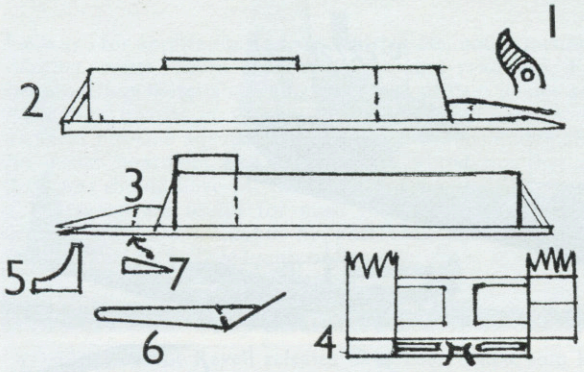
Finally, an 18 mm × 3 mm strip of plastic card is cemented between the rear edge of the glacis plate and the driving cab to fill the gap left there, and side pieces are cut out to fill in the sides of the glacis plate and the chassis sides.

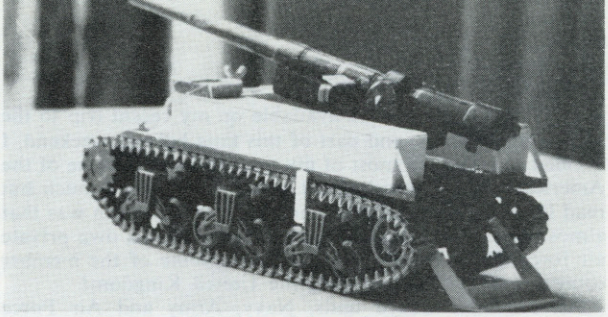
All that now remains is the detailing. Starting from the front of the vehicle, cut out two front mudguards as per the sketch and cement these to the front edges of the chassis tops. Next file down the bump on the

Below, left: *The M40 and Airfix Sherman hull tops showing parts to be removed for use in M12 conversion.* **Below, right:** *The basic M12 superstructure. Note modified trunnions.* **Heading:** *A battery of M12s firing on the Siegfried Line, September, 1944. Note opening top on superstructure sides* (Imperial War Museum).









Above: *The completed model ready for painting, showing spade at rear and sight box on gun cradle.* **Left:** *(1) Trunnion modification—remove shaded part. (2) Right side. (3) Left side. (4) Top view of front superstructure showing driving cab. (5) Front mudguard. (6) Recoil spade side. (7) Track cover support each side. All full-size except 1.*

glacis plate which would have housed the bow machine gun and cement a suitable headlight into the remaining scar to conceal it. A similar headlight goes opposite. I used wheel-hubs left over from the Flak 36 conversions for these lights. Between the lights stick another small piece of circular plastic from the scrapbox to depict a mushroom type of ventilator. A travelling crutch for the 155 mm gun can be made up most perfectly from the top of the crutch supplied in the 88 mm gun kit. Simply chop the bottom off to give a total depth of 8 mm. This goes dead central against the front of the driving compartment, but vertically rather than sloping.

Vision ports for the drivers are 6 mm × 2 mm scraps of card on the driving compartment front, and there are two access hatches 7 mm × 5 mm on the driving compartment roof, central and outboard of the gun barrel in its travelling position. Behind the driving compartment, cement an engine cover from an 18 mm × 12 mm rectangle of plastic card. This fits between the front bulkhead of the fighting compartment and the back of the driving compartment, thus neatly filling the last remaining gap in the superstructure. On the tops of the left and right superstructures go low storage boxes as shown in the drawings and the full width of the tops. I made these from cut down Centurion stowage boxes which, when trimmed, were just the right height for the job.

On the left side of the gun cradle cement 4 mm × 2 mm × 3 mm scrap of plastic, 6 mm forward of the trunnion, to depict the sight box. A small piece of plastic card at a 45 degree angle on top of this can represent the protective visor. At the rear edge of each superstructure side goes a support strut apparent from the pictures and sketches, and there is another support from the chassis side to the front of the rear bogie bracket on each side. This is 2 mm wide. Finally, make up a recoil spade—this is a very simple affair—from plastic card as in the drawing and cement this at the rear with the arms on the insides of the idler hubs. The spade can be cemented in either the raised or lowered positions, but a good idea is to cement it halfway between the two; on the actual vehicle it was hoisted by a cable and tended to be left just clear of the ground when the vehicle moved only short distances.



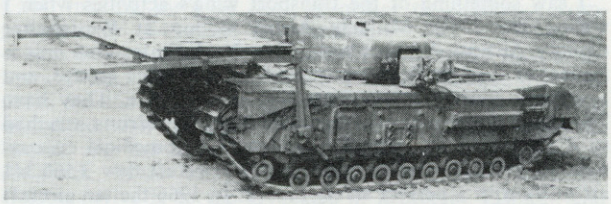
Left: *The M12 model completed. Note headlamps and vent on glacis plate.*

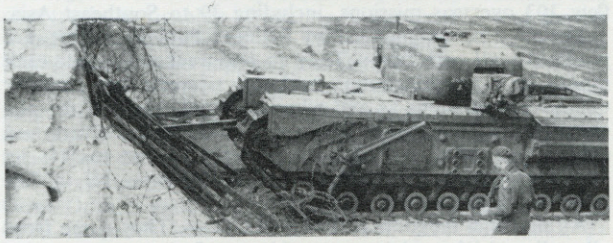
The model is painted either dark green or olive drab and suitable stars come from the Carrier kit with 'USA' numbers from the Half-track, smeared over with 'mud' to obscure the fact that they are fictional. If you don't have a Roco M40—or even if you have—there is nothing to stop you making up the same model less the gun and the spade to represent the M32 Cargo Carrier which was intended specially to accompany M12 batteries as a 'limber' vehicle carrying the ammunition and other stores for the guns.

Churchill Tank—from page 171

October, 1943, and by January, 1944, has resulted in the Goat Mk III, some 400 being produced.

For this device, 1800 lb of explosive charges were fitted to a platform 10 ft 6 inches wide by 6 ft 6 inches long. The frame was carried in a horizontal position above the nose of the AVRE in such a way that the platform was nose heavy. The weight of the platform was mainly taken by two struts attached one each side of the front of the hull. A release mechanism was fitted between the rear of the platform and the top of the hull vizor plate, and this retained the platform in position. Two antennae, spring loaded and retained by shear wires, projected horizontally ahead of the platform. When the antennae made contact with the obstacle, the shear wires broke allowing the antennae to spring backwards, thereby operating the quick release mechanism so that the front of the platform tilted forward and downwards. At the same time two sprags hinged either side of the rear end of the platform were released. The tank then pushed the explosive platform vertically up against the obstacle and backed off. The platform was now retained in its position by the two sprags. When the tank was clear of the obstacle the charges were fired either electrically or by pull igniter.





The Goat Mk III device on a Churchill showing **(top)** *the method of mounting and carrying and* **(above)** *the method of emplacement.*

IN THE AIR

by Alan W Hall

WITH only three days available on my recent trip to the United States, and part of this time being a weekend, I decided to make the most of my time by visiting some of the American reserve forces about which I had heard much but read little. I found out a lot, not the least of which was that almost every one of the 50 United States has its own private air force as big as, if not bigger than, some of the member countries of NATO including the United Kingdom!

All National Guard units, Navy, Army and Air Force come under the direct jurisdiction of the Governor of the State. In peacetime he has the authority to use these troops as he sees fit to maintain civil order, safeguard property and protect the public. Although the National Guard as such has its roots in the early pioneering days of America, the Air Component was formed as recently as June, 1946, when the 120th Fighter Squadron at Denver, Colorado, came into being. In times of national emergency the Air Guard can be called on to assist Federal forces by order of the US President. During the Korean conflict 22 Wings and 45,000 men fought beside their full-time colleagues. Again, during the Berlin crisis, President Kennedy called more than 21,000 Air Guardsmen into service and within two months of partial mobilisation 11 squadrons with 260 aircraft were in Europe ready for any emergency that might result.

So far, no Guard units have been called up for service in Vietnam. On the other hand, ANG transport squadrons have been very active flying supplies to and from the area including casevac trips for the wounded.

I saw something of the transport wing's activities when I visited the 105th Military Airlift Group at Westchester County Airport, White Plains, New York State. This unit is typical of the two fighter groups, three transport groups, and a tactical control group that exist in the State. They have 750 men on the roll and there are eight squadrons attached to it ranging from aircraft servicing to aeromedical evacuation. In 1965 the Group's ageing C-97 aircraft flew 3,560,341 air miles with a perfect safety record. In 1966 the ten aircraft flew 103 overseas missions, including 39 to Southeast Asia.

The Group, commanded by Colonel Paul F. Seifert, are practically all part-timers. They do one weekend parade each month as a combined unit and the aircrew take on their operational missions as and when required. Most of the aircrew, particularly the pilots, are regular airline flyers and spend their off-route hours away from the up-to-date jet equipment flying out of Kennedy or Newark, NJ, a few miles down the road.

Airmen sign on for a period of six years. They come from all walks of life and it was nothing to find a top executive serving as a medical orderly or even a cook. Pay is equivalent to their full-time counterparts and if sufficient service is put in they even qualify for a pension at the end of their service. Basic training, square bashing to you, takes place at Lackland Air Force base near San Antonio, Texas, and lasts for six months; service training is either done on the job or in specialised courses. Summer camp lasts 15 days and this, like the weekend parades, are compulsory. There are opportunities for commissions and aircrew training, but the competition is tough.





Top: *Still giving yeoman service with the US Air National Guard are these C-97s of 105th Military Airlift Group at Westchester County, White Plains, NY.* **Above:** *Impeccably finished HU-16 Albatross of the US Coast Guard at Floyd Bennet Field.*

When I visited the 105th I was under the wing of Staff Sergeant Ed Lamb, a flight engineer, who in the normal way is a public relations consultant in the heart of New York's advertising community on Lexington Avenue. We had to get up early for the ride out to Westchester, which was about 50 miles up-State, for work started at seven o'clock in the morning! Ed had already made four runs to Vietnam and another to the UK.

Westchester County Airport itself is not entirely devoted to ANG flying—far from it. Mohawk Airlines BAC-111s use the airport on their bus-stop services and so do New York Airways using Boeing-Vertol 107 helicopters. Add to this





Above: *Two Seastar variants of the US Marines and Royal Canadian Navy respectively at Floyd Bennet Field. RCN machine has Expo 67 emblem on tail.*

every sort of private and executive aircraft you can think of and you have some idea of what this spotters' paradise is like. I lost count of the numbers of aircraft after the 200 mark! Flying started at first light and went on throughout the day. Both Cessnas and Pipers have agencies there and there are three flying schools as far as I could tell. The hangars were full of such delights as Gulfstreams, Friendships, DH 125s and Fan-jet Falcons. On one side there was the Civil Air Patrol headquarters, an organisation that does a lot of good in helping in disaster areas, searching for missing aircraft and flying urgently needed spares and medical supplies in cases of emergency. CAP is a national organisation on which a complete story could be based. Unfortunately I had only a very short while with them and saw some of the flying training that was going on in a T-34 Mentor and other light aircraft.

Mixed up with all this was the ANG's C-97s! One wonders at the air traffic problems that must beset controllers in this region. I was told that air-miss occurrences were commonplace and that nobody really bothered to file them in the way we do in the UK. To have to wait in the *light aircraft* stack for 30 minutes to get into some airports was nothing unusual. Believe me, the Americans take aviation in a very practical way—those that can fly do—the rest don't bother.

The following day was spent with another Transport Group, this time the 106th at Floyd Bennet Field, the original New York airport of the 'thirties and now a reserve centre for both the US Navy and ANG. Elsewhere on the field there was a unit of the Coastguards and the New York City Police helicopter unit.

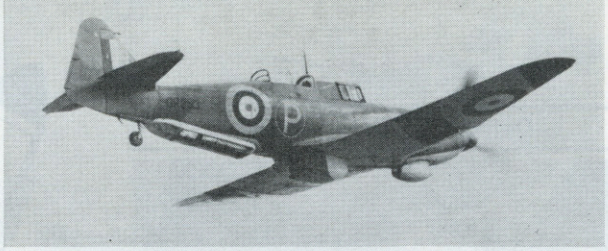
The 106th was a very similar unit to their counterparts at Westchester. They also flew C-97s and again had a similar record of long hours in the air and an impressive list of operational jobs undertaken for MAC in Vietnam. The headquarters was in the old terminal buildings of Floyd Bennet which gave one the impression of what Croydon's terminal area looked like until that airport was closed.

My main interest in visiting the field was, however, to see some of the aircraft operated by the Navy. They had a miscellaneous bunch ranging from Seastars to Neptunes, Trackers, Beech C-45, Sea King helicopters and a lone C-54 transport. Flying activity was pretty limited as the station had just suffered a visit from the Admiral and were recovering from a rather hectic two days.

The Coastguards kept their hangar not far from the Navy base and operated HU-16 Albatross amphibians and Sea King helicopters. Their aircraft were spotlessly clean like the maintenance area and although I only had time to stop and photograph their mounts, the area was obviously worth a return visit if ever I have another chance.

One lasting impression I got from my visit to just a small part of the United States reserve forces was the fact that they were not only fully up to strength but had a waiting list which in most cases was closed as so many people wanted to join. This fact amazed me for a while as having some experience of recruiting for part-time organisations of a semi-military nature in this country, I marvelled at the patriotic attitude of the American people in coming forward as volunteers in this way.

It was not long before I discovered that there was a snag. I'm not saying that the Americans *are* unpatriotic—far from it, but one of the reasons why all units are so completely up to strength is that by joining the reserve men of military age can miss getting called up for full-time service and the great possibility of being posted to Vietnam. No wonder there were a great many young business men and others with good careers at stake in Air Force blue!



DR883, the Defiant TT3 prototype (Imperial War Museum).

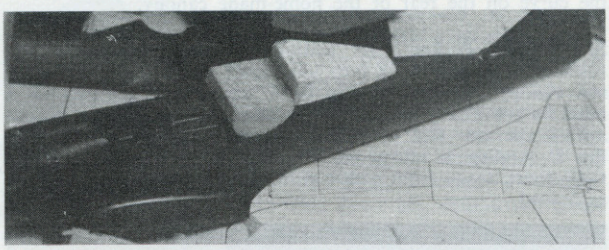
Defiant TT3

CONVERTED BY ALAN W. HALL

THERE are few conversion possibilities with the Defiant in contrast to those other two Battle of Britain fighters, the Hurricane and Spitfire, but the one that *is* possible can provide both an interesting and worthwhile addition to a World War 2 model collection. This is the target tug development of the Defiant which did valiant but unsung service during the war both with the RAF and Fleet Air Arm until the introduction of such specialist types as the Martinet.

There's quite a lot to do—the experienced modeller should be able to manage it in about ten evenings. Almost all of the basic tasks such as filling holes, cutting new ones, simple canopy moulding and the use of plastic card and filler are involved. In fact, the Defiant TT III makes an ideal subject for a beginner to conversion work.

STAGE 1 After cementing the two fuselage halves together and fitting the pilot's seat, cut out the lower part of the gun turret mounting and remove the spine to the rear of the turret for a length of 7/8 inch.



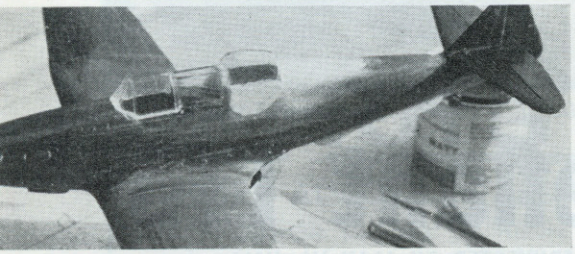
STAGE 2 Cut two balsa plugs, one to fit the semi-circular gap left by the turret and the second a wedge shape to form the basis of the new dorsal spine. Glue both in position using polystyrene cement and allow to dry.

STAGE 3 Shape both plugs into the rough dimensions shown on the plan. Then fill in the gap that exists between the fuselage side and the base line of the wedge-shaped plug with body filler. Rub down to complete the top rear fuselage shape when this has dried.

STAGE 4 While the previous work is drying out, a start can be made on the drogue housing under the rear fuselage. Remove by file and knife a section 1 7/16 inch long from this area and glue in a piece of $\frac{1}{8}$ inch balsa roughly shaped to the oblong of the drogue unit. Remember that this has to project below the fuselage and is wider than the width of the fuselage at this point. Study the photographs to see how to complete it.

STAGE 5 The canopy is now moulded. This is made in one piece including the rear part which in reality is solid. The new fuselage can be hollowed out at this stage to allow for the winch operator. Remember that this crew member faces rearward if a figure is to be included in the model.

Continued on next page

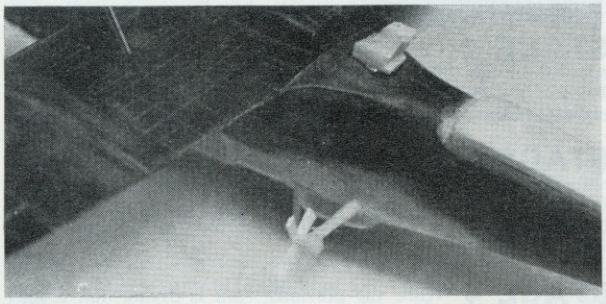


Above: *The new canopy and cockpit in position, referred to in Stages 6 and 7 on this page.*

Full details for moulding canopies from acetate appeared in our August, 1967, issue, pages 459-460.

STAGE 6 Stick in place the kit canopy after adding any extra cockpit detail required. A small gap will be found between the kit canopy and the home-made one and this should be filled with a tiny sliver of balsa wedged in place and trimmed with a very sharp knife. The circular section of balsa plug will also have to be rounded on its forward extremity to match up with the curve on the rear of the home-made canopy.

STAGE 7 The final addition to the top side of the fuselage is to add the $\frac{3}{8}$ inch long spine that runs aft from the new canopy. A small piece of balsa can be used for this but it must be completely shaped before placing in position as it butts against the rear side of the canopy and damage will result to this if sanding is attempted after it has been stuck down. A radio mast, made from plastic card, can be added now, or later, as desired.



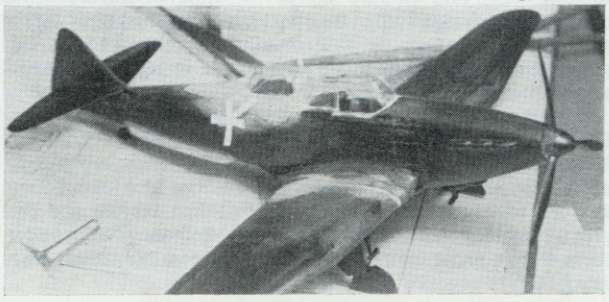
STAGE 8 You can now tackle the drogue pack and the under-fuselage hook. The former is sanded into shape and the latter is cut out of thick plastic card or a suitable small piece of sprue. It is filed to shape according to the plan. I used the slot of the stand in which to fix the hook – it is very conveniently situated.

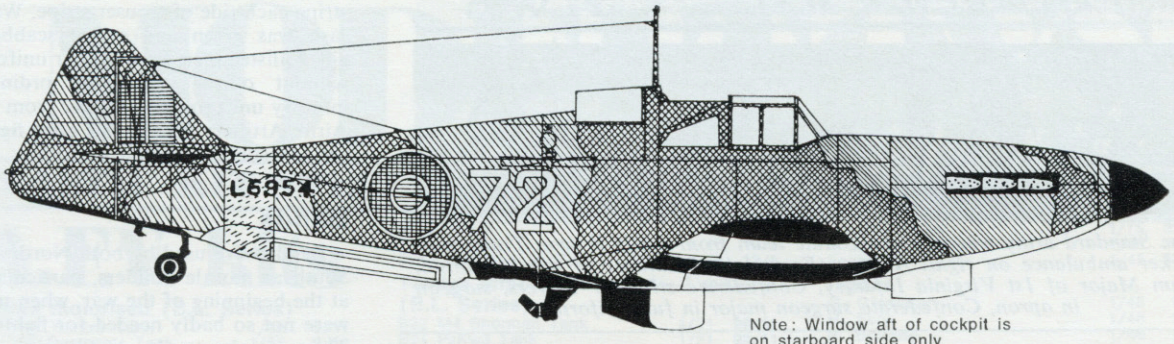
STAGE 9 The wind-driven winch was made from plastic card for the blades with $\frac{1}{8}$ inch dowel rod for the support. The right angled gears at the joint between blades and support was again made from the dowel rod but shaped according to the plan and stuck on. It is an almost impossible task to make these tiny blades revolve.

STAGE 10 The wings, undercarriage, tailplane, propeller and tail-wheel are now added. The joints between the wing and fuselage and possibly under the centre of each wing will have to be filled with body putty and sanded down as the gaps are inclined to be rather large.

STAGE 11 A pitot head was added to the port wing made from the spare radio mast in the kit. Tail guards were made from stretching sprue in a candle flame and were stuck in place using the absolute minimum of glue applied on the tip of a pin. The model is given a final polish with extra fine flower paper before painting.

Continued on page 179





Sky fuselage band

Number '72' on fuselage in white

Note: Window aft of cockpit is on starboard side only

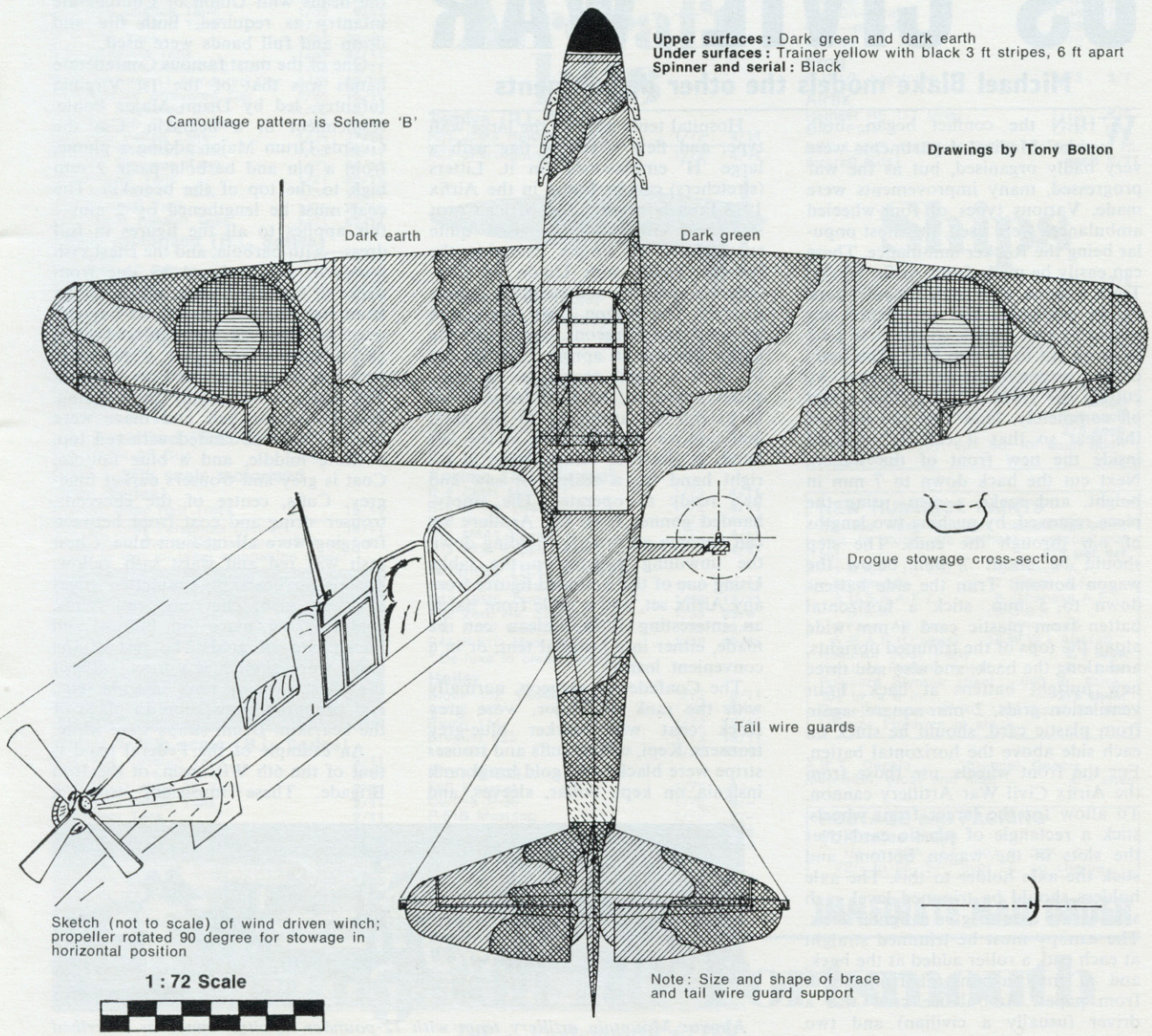
Upper surfaces: Dark green and dark earth
Under surfaces: Trainer yellow with black 3 ft stripes, 6 ft apart
Spinner and serial: Black

Camouflage pattern is Scheme 'B'

Drawings by Tony Bolton

Dark earth

Dark green



Drogue stowage cross-section

Tail wire guards

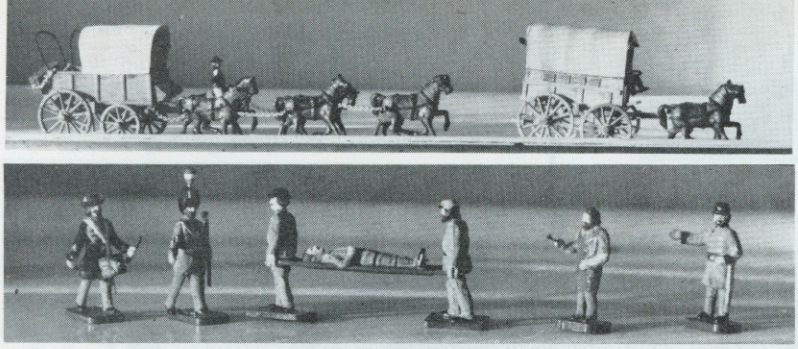
Sketch (not to scale) of wind driven winch; propeller rotated 90 degree for stowage in horizontal position

Note: Size and shape of brace and tail wire guard support

1 : 72 Scale

0 Feet 8

Defiant TT III, L6954, of No 2 Air Gunnery School, Dalcross



Top: *Standard army wagon and six-mule team from Airfix Wagon Train, with Rocker ambulance on right.* **Above:** *(From left) Drummer of 6th Wisconsin, Drum Major of 1st Virginia Infantry, Confederate stretcher bearers, surgeon in apron, Confederate surgeon major in full uniform.*

US CIVIL WAR

Michael Blake models the other departments

WHEN the conflict began, both sides' Medical departments were very badly organised, but as the war progressed, many improvements were made. Various types of four-wheeled ambulances were used, the most popular being the Rocker ambulance. These can easily be made from Airfix Wagon Train wagons, with some modifications before assembly. The ambulance was pulled by two horses, so the yoke pole must be cut to 25 mm long. The body of the wagon must be shortened by cutting the front seat and foot board off completely. Now trim the sides of the seat so that it can be replaced inside the new front of the wagon. Next cut the back down to 7 mm in height, and make a step, using the piece removed, by pushing two lengths of pin through the ends. The step should be about 7 mm below the wagon bottom. Trim the side battens down to 5 mm, stick a horizontal batten from plastic card 1 mm wide along the tops of the trimmed uprights, and along the back, and also add three new upright battens at back. Four ventilation grids, 2 mm square, again from plastic card, should be stuck on each side above the horizontal batten. For the front wheels, use those from the Airfix Civil War Artillery cannon. To allow for the larger front wheels, stick a rectangle of plastic card over the slots in the wagon bottom, and stick the axle holder to this. The axle holders should be trimmed level each side of the axle to give a lighter look. The canopy must be trimmed straight at each end, a roller added at the back, and a small awning at front, both from paper. Ambulance crew was a driver (usually a civilian) and two stretcher-bearers who were privates.

Hospital tents were of the large wall type, and flew a yellow flag with a large 'H' emblazoned on it. Litters (stretchers) can be found in the Airfix 1918 French infantry and Africa Corps sets, and either can be used quite successfully by simply changing the bearers' heads with Union or Confederate infantry and painting appropriately. The Wagon Train figures can be used for Surgeons, especially the figure wearing an apron. Trim his hat to form a kepi, or remove it completely, remove the shirt front detail to extend the apron up to the chin, and remove the bag held in the left hand. A sliver of scrap plastic in his right hand for a scalpel or saw and he's ready to operate! The empty-handed gunner from the Artillery set can become an orderly, holding down the unwilling patient on the table. Using one of the wounded figures from any Airfix set, and a table from balsa, an interesting little tableau can be made, either in a hospital tent, or in a convenient lean-to.

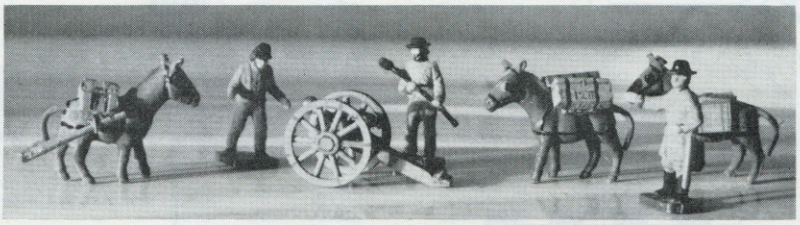
The Confederate surgeon, normally with the rank of Major, wore grey frock coat with darker blue-grey trousers. Kepi, collar, cuffs and trouser stripe were black, with gold braid rank insignia on kepi, collar, sleeves, and stripe each side of trouser stripe. Waist sash was green and sword scabbard gilt. Enlisted men wore similar uniform without officer's trim, or ordinary infantry uniform. The Officer from the Airfix Artillery set makes a good figure for the surgeon in full uniform.

Bands

Bands were used by both North and South as morale builders, particularly at the beginning of the war, when men were not so badly needed for fighting. They can be easily made using the Airfix Guards Band set, by changing the heads with Union or Confederate infantry as required. Both fife and drum and full bands were used.

One of the most famous Confederate bands was that of the 1st Virginia Infantry, led by Drum Major Pohle, resplendent in a bearskin. Use the Guards Drum Major adding a plume, from a pin and barbola paste 2 mm high to the top of the bearskin. The coat must be lengthened by 2 mm—this applies to all the figures in full dress—with barbola, and the chest sash removed, and replaced by one from paper or barbola 1.5 mm wide running from right to left. The short bayonet must be removed and replaced by a sword, from scrap plastic, 8 mm long, and the mace shortened to 14 mm. The figure is now ready for painting. Bearskin, waist belt and mace were black. Plume is banded with red top, a white middle, and a blue bottom. Coat is grey and trousers darker blue-grey. Cuffs, centre of the chevrons, trouser stripe and coat front between frogging were all medium blue. Chest sash was red and waist sash yellow. Tassels on bearskin, epaulettes, edges of chest sash, chevrons, cuff trims, coat frogging, mace top, buttons and buckle are all gold. The rest of the band wore similar uniforms, without the chest sash or rank insignia, etc., and probably wore kepis in place of the bearskin. Drum straps were white.

An example of the Federal band is that of the 6th Wisconsin, of the Iron Brigade. These musicians wore a



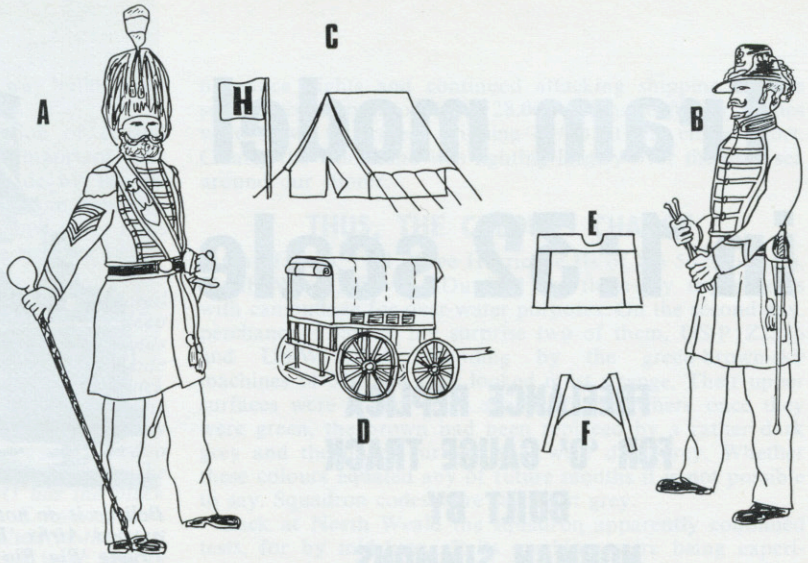
Above: *Mountain artillery team with 12-pounder howitzer made as described in text, and mules with pack saddles and ammunition.*

French inspired uniform with full skirted frock coat and black slouch 'Hardee' hats with a black plume. Swop heads with the Confederates, and make the plume from barbola paste. Jacket was dark blue, hat band and trousers were light blue, as was frogging on coat front, collar and cuffs. Waist sash was red. Gloves and drum slings were white. A brass bugle and numeral 6 decorated the front of the hat, and a small brass eagle held the turned up side in place.

Quartermaster's Dept.

The usual army wagon was drawn by a six-mule team, and was essentially the same as the famous covered wagon. The Wagon Train wagon lends itself admirably, with a few modifications. First, the team. Airfix zebras can be used, but for convenience use the horses supplied plus the two extra horses not used with the ambulance conversion. The nearside pole horse should be changed for one from the Artillery set, as the driver rode this horse. Pole must be cut to length, and chain used to link the mules.

Now for the wagon. Bend the footboard up until it stays raised at a sharp angle, and stick a plastic card top and sides on to make the tool box, remove the top and back of the old seat, covering the hole in the floor with card. An open feed box, 20 mm × 3 mm × 3 mm, was suspended from the back. For variation, the cover can be cut, and hoops from wire inserted to simulate a rolled back top. The Corps insignia (see Infantry article) and the name or number of the outfit and its contents, eg, 'Ordnance', appeared on the side of the canvas top. A brake handle from a pin stuck into the existing brake block and connected to the driver's saddle horn by rope, can be added. Finish was much the same as for artillery pieces, though some Federal militia units had green wagons with red wheels.



Key to drawings: *A—Drum Major of the 1st Virginia Infantry. B—Musician, 6th Wisconsin. C—Hospital tent and flag. D—Rocker Ambulance. E and F—Pack saddles for mountain artillery mules. Allow grooves for trunnions and make from balsa with barbola paste filling. Colour details in text.*

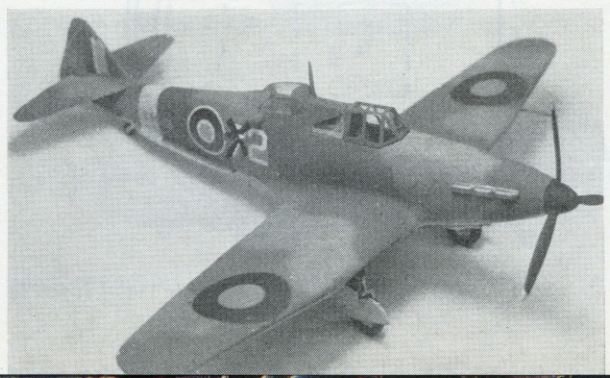
Mountain Artillery

Both sides used mountain artillery, usually in the form of the 12-pounder howitzer, which could be carried in pieces on mules, or pulled when assembled. The smallest wheels I could find are the front ones from the Airfix covered wagon. These are really too big, so the whole piece is a little oversize. The rest of the gun comes from the Airfix artillery set. First, cut the barrel to 8 mm, with 4 mm each side of the trunnions, to keep them central. Re-trim the breech end to a round shape, using a pin to make a new breech-button, and 'bell' the muzzle with UHU. Next take a carriage and cut the axle to 18 mm, recut wheel grooves 2 mm from the cheeks, and trim the cheeks to 4 mm high and 12 mm long, recutting the trunnion grooves. Shorten the stock to 23 mm, and reshape the end, sticking a 6 mm length of wire across it (the ends fit into holes in the shafts). Make the shafts themselves from tapering 20 mm lengths of cocktail sticks. Sponges and rammers were carried on the stock sides.

Now for the beasts of burden. Zebras from the Airfix Zoo set make good mules, but Airfix horses can be used, and three are needed. One carried the barrel and shafts and pulled the piece on roads. The pack saddle was standard, and is made from balsa and barbola paste (see drawing). To use the shafts, push a length of wire through the mule beneath the pack saddle, and loop the ends to fit the shafts. The second mule carried the carriage and wheels on a similar pack saddle, and the third carried the ammunition. This was in boxes about 10 mm × 5 mm × 5 mm, one on each side of the saddle. Various spare pieces of equipment, and gunners' belongings were carried on top of the saddle. Straps can be painted on, or made from barbola and stuck in place.

Defiant III—continued from page 176

Below: *The completed conversion finished as L6954, subject of the scale drawing on page 177.*



CAMOUFLAGE AND PAINTING

I tried out the new Humbrol camouflage colours on this model and as can be seen from the photographs, the results were very pleasing. The paint dries very rapidly without brush marks but I found that the pigment had to be mixed very thoroughly before application. Five minutes was not an unusual time to spend on this operation. For the undersurfaces the yellow was Humbrol Railway colour and the black their usual matt colour. The yellow was applied first and the black lines overpainted after masking the yellow areas with Sellotape strips. Blue and red upper wing markings came from the kit transfers and the remainder were cut from HisAirDec sheets. The serial was made from Letraset.

Tram model in 1:32 scale

FREELANCE REPLICA FOR '0' GAUGE TRACK BUILT BY NORMAN SIMMONS



Believe it or not but this handsome tram model started life as two Airfix 'B' Type bus bodies. Chassis comes from a Triang 'Big Big Train' tipper wagon and passengers, crew, and adverts come from the Airfix bus kit. Lining is from Blick transfers.

WHY not a tram? Why not indeed. Over 14,000 existed in Britain at their maximum extent but as a means of transport they are now, of course, practically extinct. However, many countries overseas still hold on to them and regard them more favourably than we do at home. Fortunately many examples of British trams have been preserved in museums in various parts of the country and there is the splendid working museum at Crich in Derbyshire. Hardly any model exhibition seems complete these days without a working model tram layout and they come in all scales, shapes and sizes, delighting thousands of visitors. Bec Models of London SW17 have three excellent 4 mm scale cast metal tram kits but surprisingly, despite all this interest, no one has seen fit to produce a plastic kit.

Readers who tackled my 'B' Type bus conversions in 1967, notably the 'B' Type Service Van in January and the 'Y' Type lorry in March/April, will know only too well the large number of bus body parts they have left over. I mentioned this at the time and suggested they should be carefully kept to one side for future use. Now is the moment since the tram, the subject of this month's conversion, uses two sets of spare body parts from the 'B' Type double deck bus kit as the basis of the model. I must explain that this is very much a freelance model, that is to say it is not based on any particular prototype, although there were many trams resembling my model in outline at one time. Because it is not an absolutely authentic model, readers can have the pleasure of making any variation they like and this gives plenty of scope for individuality.

Take four 'B' Type bus body sides, two each of parts 2 and 4, cut them in half, discard the forward halves and

Below: *Plastic card components for the tram's end platforms. Cut two each of parts in Fig 1 and Fig 2, both drawings full-size for model.* **Key:** *A—Position of staircase base. B—Position of controllers. C—Underfloor supports for platform. Ends form supports for bumpers. D—Position of handbrake column. E—Bumper. For handbrake column shape see constructional picture on opposite page.*

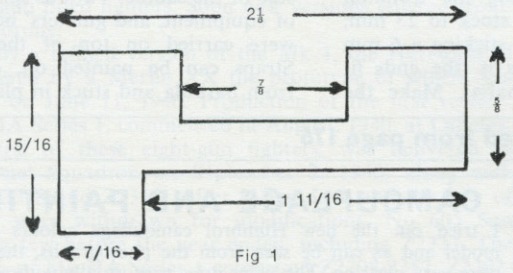
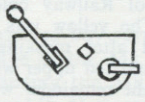


Fig 1

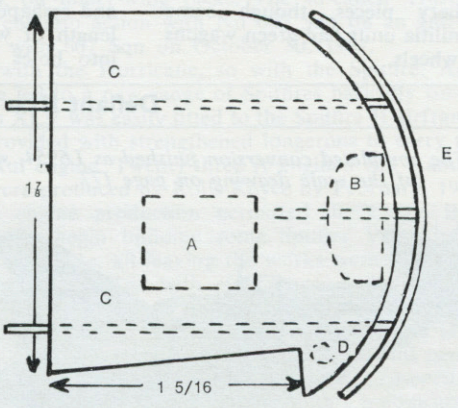
All dimensions given in inches



Controller mounted on 1¼ inch pedestal

Fig 3

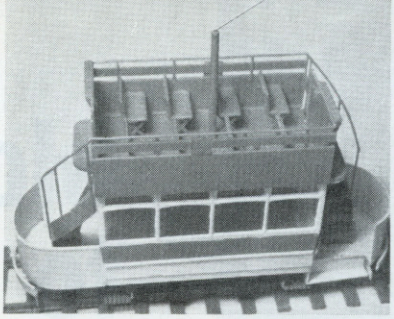
Fig 2

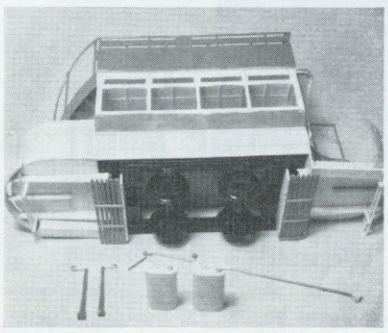


cement each of the two pairs of rear halves together. Two roofs (part 23) and two floors (part 5) have similarly to be cut, the front ends discarded and the rear ends joined to match up to the length of the sides. It is preferable not to cut these parts across the centre, but instead to cut and make the joins off-centre to give added support to the sides when the body is being assembled. Now cement the two sides, floor and two lower deck rear ends (part 16). Paint the inside of the body, window frames, ceiling and seats, add the glazing, lamps and seats and then cement the roof in place. This completes the lower deck saloon. At this stage, if your mind works anything like mine, all sorts of ideas for possible adaptations will be apparent. The body has a particularly strong resemblance to one of those cliff railway cars that can still be found at some seaside resorts. Still, this is digressing, but it might be worth coming back to in a later article.

The two end platforms are the next areas to build up and in the main are built from 40 thou plastic card. Two pieces as in Fig 1 should be cemented vertically below the entrance to the saloon at either end and the two platforms as in Fig 2 cemented to them. Slats on the floor of the platform can be made from strips of 10 thou plastic card. The body sides below the saloon are then built up from strips of plastic card to bring the sides down to the level of the platform and at the same time cover in the inward step which is the normal shape of the Airfix bus body. The curved sides around the platforms are formed from two strips of 10 or 15 thou plastic card $1\frac{1}{8}$ inches wide, laminated together and curved round the edges of the platforms. Two pieces of thin card cemented together are easier to bend and, when dry, hold their shape better than one piece of thick card.

The two staircases come from the 'B' Type kit (parts 80-82) and can be assembled and cemented in place at this stage. I removed the side panels from the outer guard (part 82) but these can be left in place if you prefer. The front and rear ends of the top deck (part 47) are standard but the sides (parts 48 and 49) must be reduced in length and in my model are $4\frac{3}{8}$ inches long. The top deck seats from the 'B' Type kit are not strictly accurate since the backs are obviously not reversible to suit the direction of travel as they would be in a tram but they look reasonable enough. There is space on the top deck for eight seats





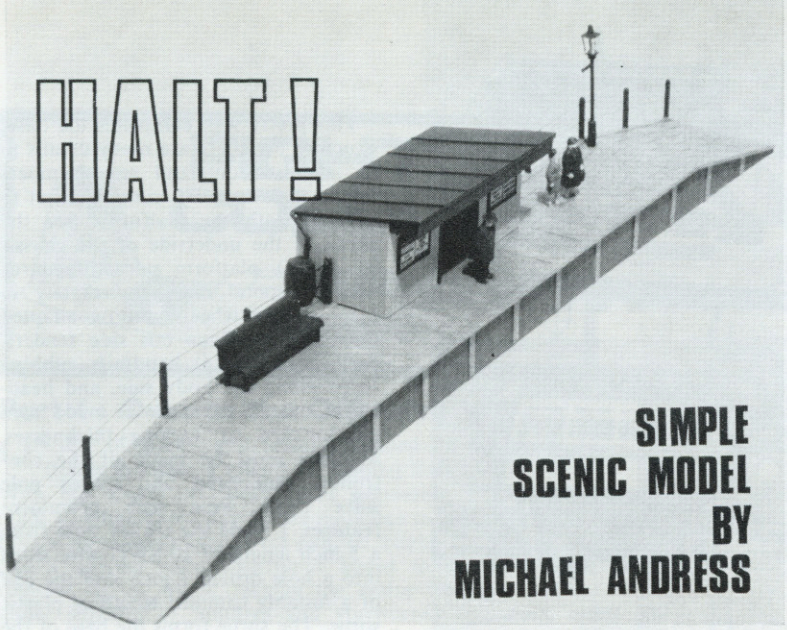
Top: *Model completed and ready for painting showing seating arrangement and trolley pole on top deck.* **Above:** *Underside view shows how the tipper wagon chassis is used, plus construction of the end platforms and control components.*

but remember to leave room between the back of the rear seat and the rear panel so that when the tram reverses direction and the rear end becomes the front end and the seat backs are reversed, there is theoretically room for someone to sit down.

Now we can turn attention to the chassis. There is of course no reason why a model of this size could not be motorised. No doubt many readers will attempt it but I have tried to keep things as simple as possible and in this article at least, have avoided any complications. A very simple way out of the chassis problem is to do as I did and use a Tri-ang 'Big Big Train' Tipper Wagon with the tip body, vertical supports and two couplings removed. After modification this way it is a simple matter to cement the remaining part of the wagon below the floor. Many refinements could follow this such as fitting dummy leaf or coil springs and the chassis wheelbase should by rights be lengthened to between 2 and 3 inches instead of the $1\frac{1}{2}$ inches of the Tri-ang wagon. This is one of several points over which the builder has freedom to decide. The Tri-ang wagon, of course, runs on 'O' gauge track and in 1:32 scale this represents a scale 3 ft 6 in gauge which was a very common track gauge for British tramways—a happy stroke of luck for 1:32 scale modellers.

This pretty well completes the basic structure but there are many details to be added. Front and rear bumpers cemented to supports running front to back beneath the platforms (see the photo of the underside of the chassis for detail), platform steps, lifeguards (the horizontal ones immediately in front of the wheels can be adapted from the 'B' Type bus side fenders, parts 120 and 121), handrails, rubbing strips along the body side, and headlamps, etc. All these can be made from plastic card of varying thicknesses. Mention must be made of the controller, handbrake, and trolley pole since these were such prominent features. I made the trolley pole from a 5 inch length of 16 SWG wire fitted into a hole drilled $\frac{3}{4}$ inch into the end of a suitably trimmed length of plastic sprue. The sprue forms the base of the trolley pole, is $2\frac{1}{4}$ inches long and is cemented to the floor of the top deck. The wire trolley pole can be swivelled and removed for ease of storage. The controllers (Fig 3) were made from odd pieces of plastic card built around a balsa wood base and the handbrake columns were formed from plastic sprue. The domed ends cut from the ends of plastic sprue formed the knobs on the controller and the handbrake handles. The tram driver was formed by removing the right arm and ticket punch from the bus conductor and fitting the right arm from the bus driver.

Finally comes the sheer joy of painting. Trams give unlimited scope since their liveries are so varied and in a free lance model such as this you can make up any livery that suits you. Lining and lettering are particularly noteworthy features of tram liveries and there is wonderful scope here for using the wide range of Blick Dry Print transfers. There must be many readers who have never ridden in a tram, or never even seen one perhaps. There are many excellent books on trams, and for those who have never ridden one, there are gramophone records available that do at least give some of the sensations. One of the most extensive book lists is the range published by the Light Railway Transport League and some of them have been reviewed in these pages. However, as a general introduction to the subject and as a fill in for some of the detail which is unavoidably missing from this article I thoroughly recommend *The British Tram,* published by Model Aeronautical Press Ltd at only 5s. It is a gold mine of information and well illustrated.



HALT!

SIMPLE SCENIC MODEL BY MICHAEL ANDRESS

THIS model is intended particularly for beginners for two reasons. First of all it is simple and almost as easy to build as the kits in their original form. Secondly, it is usually quite early on in the building up of a layout that one realises that an extra station would add to the interest of operation. This halt can be quickly built, takes up little space on your layout, but provides an extra destination for your model passengers.

Now to the model itself. It is not based on any particular prototype but is fairly typical—you can easily modify it to suit the style of your own railway buildings if you are trying to keep a consistent styling throughout. You will need two Airfix trackside accessory kits (you will only be using the two platelayers' huts but the other items will be useful elsewhere on your layout) and, for the length of platform I have built, one station platform construction kit. I also used some small pieces of plastic card and a few other odds and ends.

The Shelter

This is built from the two platelayers' huts parts. Refer to the diagrams to help you to follow the account given below. The two fronts are cut as in Fig 1 and pieced together in order 1, 2, 3, from left to right. The left hand edge of piece 1 must be bevelled to fit the end. The right hand edge of piece 3 is already bevelled. The right hand edge of piece 1 should be bevelled the opposite way (that is, sloping out front to back) to fit neatly to the bevelled edge of piece 2.

The back is made up from the two backs cut and rejoined in the order shown in Fig 2. The two outer joins are not initially very strong as one edge of each is bevelled and the other straight leaving a wedge-shaped gap, but these will be strengthened when the inner partitions are fitted. Strengthen the middle joint with a strip of scrap plastic glued along it. Now cement the front, back, and ends together making sure that the structure is square. Trim the other two ends down as shown in Fig 3 and glue them in place as partitions so that they cover the two outer joins in the back. These two ends are placed so that their original outer surfaces (the ones grooved for planking) face inwards.

Reference to the photo showing the inside of the shelter will help to make the method of construction clearer. I used the piece discarded from the right hand edge of piece 1 of the front as a seat, glueing it along the back wall so that the top surface of the seat is about 8 mm above the ground. The walls can now be painted. Cut 1 mm wide strips of thin plastic card to fit at each side and across the top of the doorway in the front of the shelter. Paint these strips and then glue in place.

Cut the roof from 20 thou plastic card making it 45 mm by 78 mm and cement it in place so that it overhangs about 1 mm at the back and sides with the rest of the overhang at the front. The decorative valance on my model was cut from the lower 5 mm of the side of a discarded platform canopy kit. The front piece is 76 mm long and is, after painting, glued to the undersurface of the roof 1 mm in from the front edge. The two side pieces are cut to length and the top edge of each is cut on the slope so that it will fit under the roof with the lower serrated edges horizontal and matching up with the lower edge of the front. These side pieces should also be painted before assembly. If you haven't any left over pieces such as I used, you can cut these parts from plastic card, scribe for planking and then notch the lower edges with a small file for the serrations. Add trim boards of prepainted 1 mm wide strips of thin plastic card along front, back and sides just beneath the roof overhang.

I covered the two window openings in the front of the building with advertisement boards and cut the four posters from a sheet of 4 mm scale station signs. Then I used some lengths of thin plastic card about 1 mm wide to fit around the pairs of posters. Touch up the edges with paint and then cement the boards in place over the window openings. The height of my posters was only just enough to cover the openings and I had to be careful not to trim the posters down unduly to avoid leaving a gap.

The roof is completed by cementing 1 mm wide strips of thin plastic card across the roof from front to back, five strips at 13 mm spacing centre to centre. Paint the roof black. Add the downpipe and barrel and paint any parts not yet painted to complete the building. My colour scheme is cream walls, green trim, and black roof.

The Platform

The platform was built from one Airfix platform kit but altered to give a platform with a ramp at each end. However, you can build your platform shorter or longer (by using extra kits), with a ramp at only one end, or without ramps at all. I used one of the lengths of platform top, one of the platform front pieces, the single ramp top supplied, and both the ramp front pieces without alteration. From the second platform top part, I cut a length matching the length of the sloping top edge of one of the ramp front pieces. I then cut the second platform front piece down in length to match the left-over piece of the platform top part. I had to do a little further cutting down of these two pieces so that the concrete upright facing pieces on the platform front pieces are at matching distances. I also attempted to make the paving stones alternate properly, but in fact I went slightly astray on this matching up; however, it is not at all noticeable.

I then assembled the platform parts very much as the unaltered platform kit would be built up, using the join-

ing pieces provided and extra pieces of scrap plastic to strengthen the joints. The join for my made-up ramp came at the junction of the sloping and flat parts instead of on the flat as with the original kit ramp top. I fitted the platform supports in the sockets provided and also put one beneath the join at the top of the added ramp, cutting the top of the support to clear the ridge on the undersurface of the platform top. I then glued a rectangle of 60 thou plastic card 84 mm by 12 mm to the back edge of the platform in the middle to support the back of the shelter and the rain-barrel. I placed four more supports under this—as I only had two left from the kit, I made the extra two from plastic card.

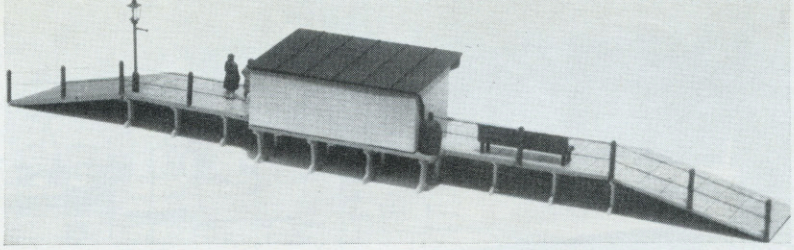
For the fencing at the back of the platform, Airfix platform fencing or fencing from the Airfix fencing and gates set can be used, but I wanted the rather more primitive type of fencing often used at this type of station; the type with posts linked by two wires. I built this up from $\frac{1}{16}$ inch square stripwood and black thread. This requires a little care to make neatly but if you use my method it is not difficult.

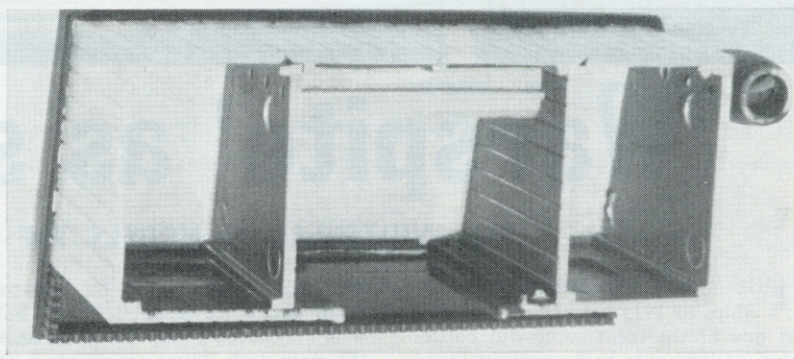
I made notches in the back edge of the platform to take the lower ends of the posts. These holes are next to the shelter on each side, at the top of each ramp, at the bottom of each ramp, and then halfway between these, giving a total of five notches on each side of the shelter. A couple of the notches originally present at the rear edge of the platform may be in the correct position; if so, enlarge them slightly to take the posts. Any other notches not at the correct spacing should be filled in with scrap plastic as should the two notches on the front edge of the platform ramp. Cut the ten posts to length (16 mm), round the tops slightly, paint, and with a needle make a hole through each post 2 mm from the top and another 6 mm below this. Now cut a length of black thread about three times the distance between the end of the platform and the shelter and thread it on to the needle. Pass the needle through the upper holes of five of the posts and back through the lower holes.

Now start with the post where the thread passes from the upper to the lower hole and fit this post into the notch nearest to the platform shelter. Then fix the second post into the second notch away from the shelter and so on with the remaining three posts, making sure that the posts are in the right order and the correct way round, and also that each post is vertically upright. Repeat the whole procedure with the second set of posts at the other side of the shelter. When the glue has dried firmly gently pull the threads taut and apply a blob of glue at the junction of each post and thread, holding the threads on the stretch until the glue sets. It is important for a neat and realistic effect to ensure that all the threads are stretched tightly between the posts. When the glue has set hard trim the two ends of thread emerging from each end post using fine scissors or a sharp modelling knife, keeping the thread pulled taut as you do so.

Final touches are the seat (from an Airfix platform accessories set), the lamp (Merit, painted with matt paint for a better appearance) and some Airfix figures. For added realism, trim off the bases of the figures and hold them in place with a little cement. Alternatively cut new transparent bases from Polyglaze.

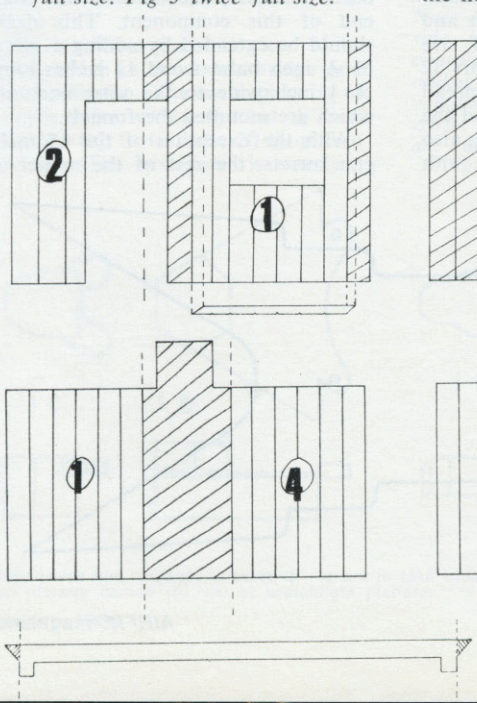
I have not yet added a nameboard (for the simple reason that I have yet to decide on a name) but this is an essential. There is a nameboard in the Airfix platform accessories set, or you could make one from plastic card.

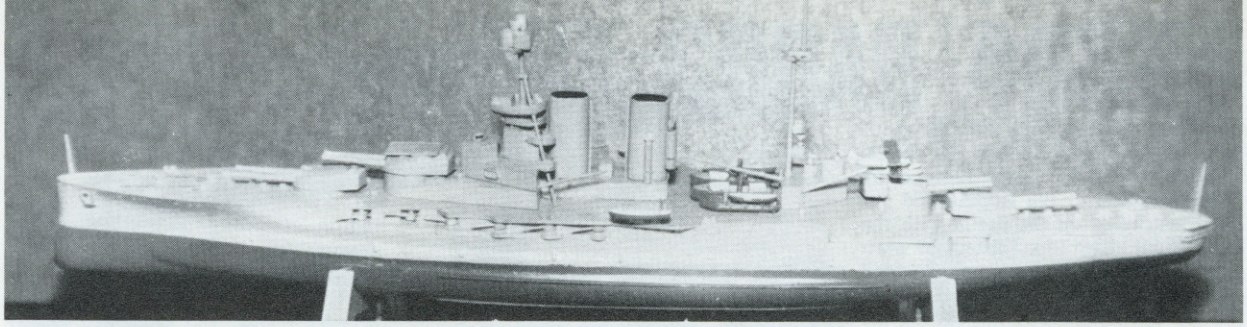




Top: *Rear view of the completed model which is ideal for virtually any model railway layout, large or small.* **Above:** *Underside view of platform shelter shows walls made from platelayers' huts cut as directed.*

Below: *Top row—Fig 1; centre row—Fig 2: bottom row—Fig 3. Discard shaded parts and assemble in order given in text. Figs 1 and 2 approx full-size. Fig 3 twice full-size.*





'Warspite' as she was

IAN WHITEHEAD RE-MODELS THE AIRFIX KIT

THE 'Queen Elizabeth' class battleships of 1915 have been described as one of the most successful battleship designs ever to be commissioned into the Royal Navy, and their record of service over thirty years helps to bear out this contention. During this time, the class underwent numerous changes in appearance, and was completely altered during two major refits. The project described in this article is to convert the Airfix kit of HMS *Warspite* back to her condition at Jutland, and the modeller will require to combine the *Warspite* kit with a certain amount of the superstructure from a *Hood* kit, or alternatively, undertake a fair amount of detailed scratch building.

A detailed history of *Warspite* has been written by Capt S. W. Roskill, and this book, along with the relevant editions of *Janes Fighting Ships* and *Warships of World War I* by H. M. Le Fleming, all contain much useful information for the modeller, together with many photographs.

As the first world war proceeded, many minor detail differences were introduced to this class and it is difficult to establish the precise dates of such modifications. The line drawing shows *Warspite* in 1920, and all detail added after 1916 is shown shaded.

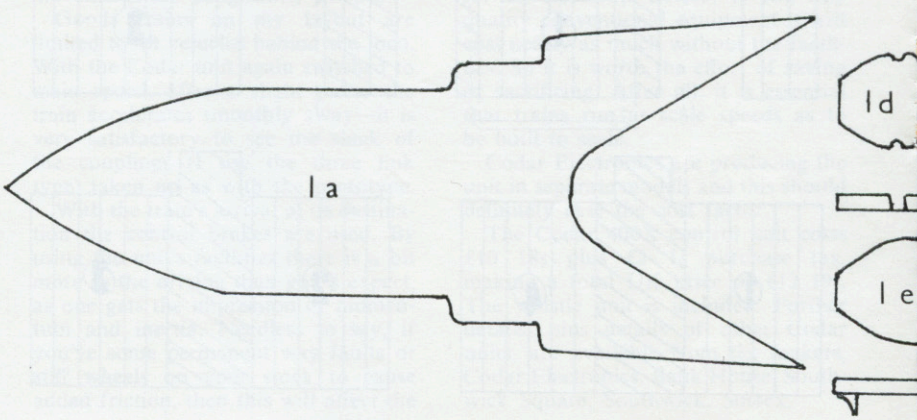
The conversion begins with the hull and main deck mouldings which must be cut away at the stern to accommodate the 6 inch gun positions in a similar fashion to the forward battery. The only unit to actually mount these extra four guns was the *Queen Elizabeth* and in this ship they were removed at a very early stage and the ports plated over.

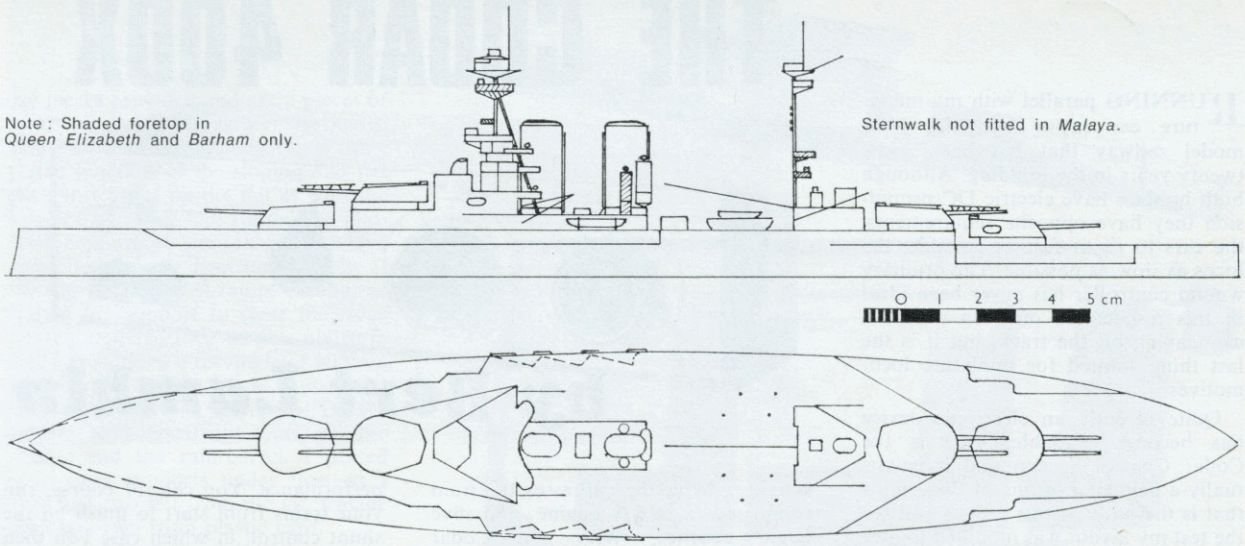
The hull moulding on the model is cut vertically downwards for a depth of 5 mm at points 75 mm and 28 mm from the aftermost point of the sternwalk canopy. The after end of the main deck moulding is cut away to the shape given in Fig 1a, and two small decks are inserted in the hull, with bulkheads 4 mm high to fit under the main deck. These are visible in the top photograph. It is now necessary to make the mountings for the extra four 6 inch secondary guns. This entails cutting the top of the hull to gun deck level at points 101 mm and 95 mm, 87 mm and 81 mm from the bows on both port and starboard sides and removing the 6 mm pieces between the cuts. Small decks of scrap card are added inboard to continue the gun decks, and 3 mm high screens are added to the inboard edges, as in the photograph. Four extra guns and their swivel pins are made from scrap sprue, and mounted under the main deck. The prominent 'gash chutes' are removed from both sides of the hull, along with the extremities of the catapult supports.

The main deck moulding (part 8) is now taken in hand for further modification and the catapult, hangars and support structure for part 14 are removed. The aft location for Part 32 is cut down to $\frac{7}{16}$ inch long, spread equally across the centre line, and the location for the stern deckhouse is also removed. The projecting pieces with the holes for the aft AA mounting should also be cut flush to the hull side. The work on this part is now complete except for plugging the holes for the forward AA batteries, the aircraft cranes and the groups of boats each side of the aft superstructure. Holes should be drilled on lines $\frac{3}{8}$ inch and $\frac{5}{8}$ inch inboard on each side. The aft hole on the $\frac{3}{8}$ inch line is on the catapult centre and the forward hole $\frac{3}{8}$ inch forward of the catapult line. The other holes are placed so that the aftermost one is $\frac{1}{16}$ inch forward of the catapult centre, and the forward hole a further $\frac{1}{2}$ inch forward. These holes are to take the boat groups and should be (say) $\frac{1}{16}$ inch in diameter.

Part 32, the forward shelter deck, is now cut down so that the projecting piece at the after end is $\frac{1}{2}$ inch wide, and the location for the conning tower sides is removed, together with the two other vertical projections at the after end of this component. This deck should be extended by adding a piece of $\frac{3}{16}$ inch balsa wood $1\frac{3}{8}$ inches long $\times$ $\frac{1}{2}$ inch wide to the after end, on which are mounted the funnels.

With the exception of the 15 inch gun turrets, the rest of the model is





now scratch built, and 'B' and 'X' turrets should be modified by the addition of flying-off platforms for the seaplane. These are made from 20 thou card and are $\frac{9}{16}$ inch × $\frac{3}{8}$ inch. Strictly, they are not applicable to the period of Jutland, but they do save having to remove the AA mountings from the turrets. This is left to the modeller's discretion, as it is difficult to ascertain exactly when the various modifications were carried out.

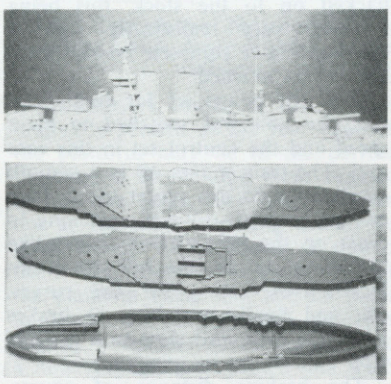
The bridge assembly is the next part to be tackled, and although some parts from the *Hood* could be used, I preferred to scratch build, as it would prove expensive to purchase a *Hood* for a few useful parts.

The lowest platform is made from $\frac{3}{16}$ inch balsa, surfaced with 20 thou card and a further piece of 5/32 inch balsa added at the forward end as in Fig 1b.

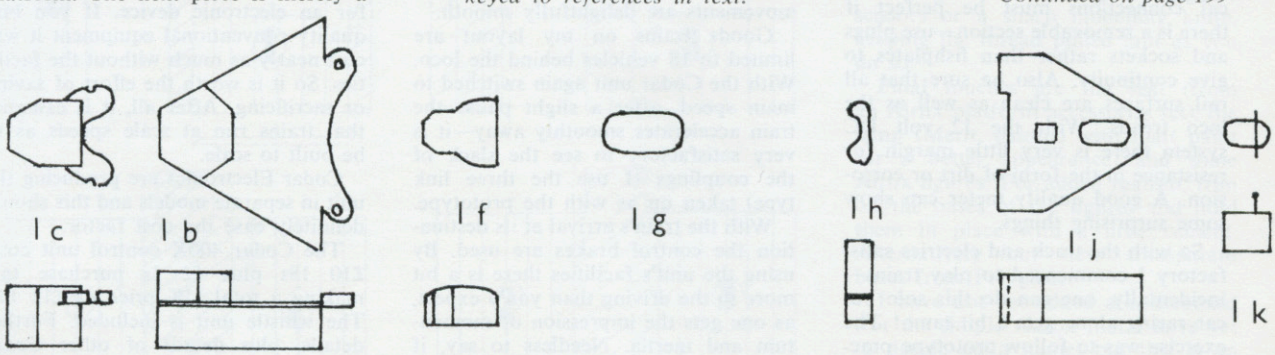
Fig 1c shows the next piece to be added which is the lower bridge and signal platform. The main piece is of $\frac{5}{16}$ inch balsa with a slot cut $\frac{1}{16}$ inch from the top to take the 20 thou card platform. The next piece is merely a rectangle of 30 thou card 8 mm × 4 mm on which is mounted a further platform. This is made from 20 thou card to Fig 1d, and topped by a piece of $\frac{1}{8}$ inch balsa 7 mm × 5 mm. The top platform (Fig 1e) is again made from 20 thou card and the control cabin is made from $\frac{1}{8}$ inch balsa 7 mm × 6 mm. The tripod legs are of stretched sprue, two 38 mm long and the central vertical member is 19 mm long. Part 115 is cemented to the top of this and the fighting top in Fig 1f is made of $\frac{3}{16}$ inch balsa and cemented to the top of the assembly. Part 41 is inverted and the stem filed short (1 mm) completes the bridge. Part 56 is cemented on to the front of the lower platform.

The two funnels are now made to Fig 1g from $\frac{1}{2}$ inch × $\frac{1}{4}$ inch balsa, each $\frac{15}{16}$ inch high. Cowls are formed by doming the tops and running the edge of a sharp file round the funnel approximately 1 mm from the top. Exhaust steam pipes $\frac{7}{8}$ inch long are added to the front of the aft funnel and the rear of the fore funnel. The

Continued on page 199

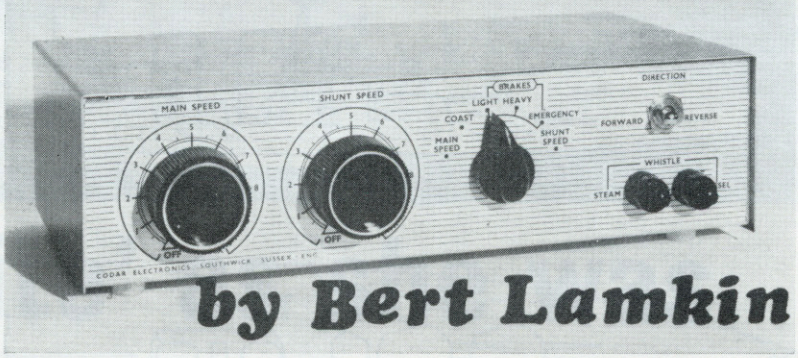


Drawing top: Warspite *as she was in 1916. Half full-size for model.* **Picture top:** *Eye-level view of new superstructure; compare with drawing.* **Above:** *The deck before (centre) and after alteration for 1916 configuration. Note the cut-outs for the after broadside battery.* **Heading picture:** *The completed model after conversion makes a striking contrast to the 1940 version of* Warspite *depicted in the Airfix kit. Drawings foot of page are full-size for model parts and are keyed to references in text.*



Note : Holes and recesses in parts 1b - 1e are to take tripod masts.
Two liferafts carried on rear of searchlight platform.

THE CODAR 400X



by Bert Lamkin

RUNNING parallel with my miniature car racing activities is a model railway that has been some twenty years in the building. Although both hobbies have electric DC propulsion they have opposite requirements, the cars to go as fast as possible, the locos as slow as possible. The ordinary wound controller has never been ideal in this respect for one can accept a car leaping off the track, but it is the last thing wanted for miniature locomotives.

Quite recently an electronic device has become available. This is the Codar Control System and it is virtually a field trial of one of these units that is the basis of this article, and for the test my layout was modified to give a continuous run as well as terminus to terminus so that a time factor could be introduced.

The Codar Unit is produced in four versions and it is type 400X that was tested. This incorporated main and shunt speed control, braking facilities and whistle and a separate 16 volt AC output.

The unit was installed between the mains supply and the track switchboard. In fact, being single handed, I used plugs and sockets so that it could be positioned at various parts of the layout, though obviously with more staff several units could be permanently located.

My motive power department has eight locos with two more under construction. They include GWR 4-6-0 express engines, 2-6-2 Prairies and 0-6-0 pannier tanks. These locos are powered with four different types of motor and are, of course, of varying weights. This factor alone has in the past caused some difficulty in satisfactory running.

One point I would stress before proceeding. It is essential that all electrical connections must be perfect if there is a removable section—use plugs and sockets rather than fishplates to give continuity. Also be sure that all rail surfaces are clean as well as the loco treads. With the 12 volt DC system there is very little margin for resistance in the form of dirt or corrosion. A good quality meter can show some surprising things.

So with the track and electrics satisfactory I commenced to play trains—incidentally, one can do this solo but car racing alone gets a bit tame! The exercise was to follow prototype practice with fast and stopping passenger trains, various arrangements of goods traffic, light engines and marshalling activities. With the expresses the train comprised a 4-6-0 engine and five bogie coaches. With the Codar switched to shunt speed the loco was backed on to the stock, this being achieved very realistically with it creeping under complete control until the buffers touched.

With the points set for continuous run, the unit was switched to main speed and the control set in this case to 3. The train moves off in a smooth acceleration to this preset speed, then one proceeds to drive it, switching to coast on the long straight runs—like 'matching up' on the full-size steam locomotives—easing for the curves, etc, and finally switching to brakes when the train will slow to a gradual stop entirely on its own.

The braking distance, of course, varies with the speed and weight of the train, but with a little practice in advance it will stop at the platform in the approved style. There are three degrees of braking so if you are caught napping you can switch to emergency.

All shunting activities are carried out with the Codar switched to shunt speed and the appropriate speed used. All operations can be performed at correct scale speeds without any hesitancy by the loco; in fact all movements are delightfully smooth.

Goods trains on my layout are limited to 18 vehicles behind the loco. With the Codar unit again switched to main speed, after a slight pause the train accelerates smoothly away—it is very satisfactory to see the slack of the couplings (I use the three link type) taken up as with the prototype.

With the train's arrival at its destination the control brakes are used. By using the unit's facilities there is a bit more to the driving than you'd expect, as one gets the impression of momentum and inertia. Needless to say, if you've some permanent way faults or stiff wheels on your stock to cause added friction, then this will affect the performance. You can, of course, run your trains from start to finish on the shunt control, in which case you then have the orthodox type of control you would expect from a basic conventional controller.

WHISTLE UNIT

The whistle is a tiny speaker unit which can be fitted into most locos or in the tender. It is wired across the motor bushes and responds to a frequency transmitted from the control panel when the appropriate button is pressed. In fact, there are two buttons, one for steam and one for diesel, or you can use both to simulate British Rail's two tone effort. The whistle operates whether the loco is stationary or moving, or you can locate it on the track side. It makes sure the signalman the other end is awake. Older enthusiasts may be critical of the steam sound, though, as the various companies' whistles varied in tone.

A great advantage I found with the Codar was that it controlled all the engines irrespective of the type of motor fitted, something I personally haven't managed previously from a single unit.

The price of the Codar is reasonable for an electronic device. If you buy quality conventional equipment it will cost nearly as much without the facilities. So it is worth the effort of saving or sacrificing. After all, it is essential that trains run at scale speeds as to be built to scale.

Codar Electronics are producing the unit in separate models and this should definitely ease the cost factor.

The Codar 400X control unit costs £10 18s plus £2 1s purchase tax, making a total UK price of £12 19s. The whistle unit is included. Further details, plus details of other Codar units, are available from the makers, Codar Electronics, Bank House, Southwick Square, Southwick, Sussex.

Household Brigade of 1830

Conversions by J. S. R. Mead



THE right hand figure in the first photograph depicts a sergeant in summer dress. The trousers, gloves, crossed belts and musket sling are white. The double-breasted scarlet coatee has blue facings and white turn-backs. The buttons on the front and cuffs are in pairs, the epaulettes are gold as are the three stripes on the right arm. The bearskin has a red plume with a gold tassel beneath, and triangular plate in front.

The model is produced entirely from the Airfix Coldstream Guardsman kit and is built in accordance with the instruction sheet, except that the left arm should be filed and bent to give the required position. The tunic below the waist requires filing down to form the top of the trousers. Plastic putty is used to fill any holes that occur in the process. The coat tails are formed of paper and are similar to those illustrated in the photograph of the Horse Guards Trooper on this page, but in this case are longer, falling almost to the level of the knees. The shoulder belts are also formed of paper, the one over the right shoulder carries a bayonet and sword, and the other a black ammunition pouch which is made from a small block of balsa wood. The epaulettes are formed from pieces of scrap plastic with a fringe of paper. The musket, which is carried butt uppermost, is the famed Brown Bess Flintlock.

Scots Fusilier Guards

THE left hand figure illustrates an officer wearing the winter dress of the period. The uniform is similar to the above model except for the trousers, which are dark blue with a gold stripe down the seams. The sash is gold instead of crimson. The buttons on the coatee are grouped in threes and the bearskin has a tassel and badge of gold, with a white plume. Once again the figure is produced from the Coldstream Guardsman kit and is identical in construction to the previous model, except that in this instance the feet are placed together, the right arm is bent and the hand holds a map, and the head is bent slightly forward.

The 2nd Life Guards

THE Trooper depicted here wears a silver helmet with gold chinstrap and badge. The crest is black. The coatee is scarlet with dark blue collar and the tail has dark blue turnbacks. The cuirass is silver with gilt straps. The epaulettes are gold.

The trousers are dark blue with a red stripe. The gloves, scabbard-sling, sword knot and shoulder belt are white. The flask cord on the latter is blue.

The figure is basically constructed from the Airfix Lifeguard kit but with the substitution of the Coldstream Guardsman legs and boots. The tunic requires treatment with a fine file to remove the belt, buttons and all creases, and the lower part smoothed down to form the top of the trousers. The tails are formed of paper as previously described. The right arm is bent in the usual way in order to carry the sword. The top of the left leg requires filing to obtain correct marching position.



Above: *Front and rear views of the Royal Horse Guards trooper. Note the sword and sabretache, and large plume on bearskin.*



Above: *Two models made from the Airfix Coldstream Guards kit are an officer of the Scots Fusilier Guards in winter dress (left) and a sergeant of the Coldstream Guards in summer dress.* **Right:** *Trooper of 2nd Life Guards is a combination of both Airfix Guards kits.*

The badge and spike must be removed from the helmet with a file and replaced with the large semi-circular badge and crest which is best carved from a piece of balsa wood.

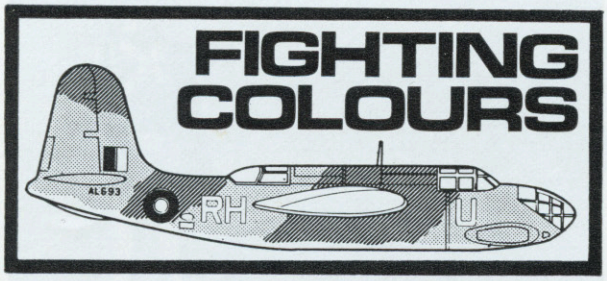
The belt and scabbard slings are narrow strips of paper and the left hand is easily adapted to carry the scabbard.

Royal Horse Guards

THE photographs illustrate the uniform of a Trooper. The black bearskin has a large red plume passing over the top. The coatee is dark blue with red collar and turnbacks. The cuirass is silver with gilt straps. The epaulettes are gold.

The breeches, gloves, sword-knot and pouch belt are white, and the flask cord is red. The boots and sabretache

Continued on page 199



Part 4: Over to the Offensive

ONSET of winter and losses sustained in the Battle of Britain brought a respite in fighting around our shores. With the return of cloudy skies noticeable changes were made to home-based day-fighter markings in December, 1940. Port wing undersurfaces were painted 'Night' (or matt black) and a narrow yellow surround added to the under-wing roundel on the black, leaving the entire remainder of the under surfaces of Spitfires and Hurricanes rich duck egg green. The order was also given to apply a lighter shade of duck egg 'blue'—the pale Sky Type S of succeeding years—to spinners and as an 18 inch band encircling the fuselage just ahead of the tailplane. Some bands were painted over serials; on others the serial was re-applied or a revealing gap left the number on the camouflage base.

February 18, 1941, brought a revision. The black under surface was now to be removed, except on Whirlwinds which retained their unusual rich blue and black finish for many months for 'recognition' purposes.

Fighter camouflage during 1941 reflected operational policy changes. Firstly, at the turn of the year, home based fighters were increasingly employed on coastal convoy protection, flying about 400 sorties monthly. From March, closer escort began and attention to harbour defence increased the two duties claiming about one-fifth the total of day fighter sorties. In April, half of the latter were devoted to convoy protection, and between April and June some 7,000 sorties per month were made on shipping protection. These were the response made to 161 reported attacks on shipping in coastal waters.

Secondly, orders were given in December for Wing formations to make sector offensive sweeps over the Channel, starting an offensive to tie up and engage German forces in the West. They were extended to include flights across to France using cloud cover, during which low level attacks were made on airfields, etc. The first took place on December 20, 1940, when two Spitfires P7602 and P7669 left Biggin Hill at lunch time, flew below cloud to Dieppe, strafed ground targets, left France near Le Touquet and flew back to Horsham St Faith.

Enemy fighters then failed to re-act until January 12.

Below: *Spitfire IIA P7665 (?): YT-L of No 65 Sqn photographed early in 1941 with duck egg green under surfaces and Sky Type S adornments. Codes were mid-grey. Note the unusual tall fin striping* (All pictures courtesy Imperial War Museum).





Top: *Hurricane Mk 1s of No 257 Sqn taking off late in 1940, with black under-wings and yellow outline to accompanying roundels. DT-A with the blunt spinner is V6962, DT-O is V6873 and DT-G is V7137. The Sky bands and spinners date the photograph as probably late December—not November.* **Above:** *One of the new types which came into their own in 1941 was the Westland Whirlwind. P6984: HE-H shown here wears the unusual paint scheme applied to the Whirlwinds. Unlike other fighters they had pale blue (not duck egg green) and black under surfaces, and the last time I recorded one such painted was on June 22, 1941, P6997 being the machine. HE-H wears black under surfaces to the port wing, and has Sky Type S spinners and fuselage band.*

Between December, 1940, and mid-June, 1941, numerous patrols of this nature called *Rhubarbs* were successively carried out, 233 sorties being effective. On 26 occasions there were battles, but enemy losses were slight.

Thirdly, there came larger 'sweeps' by Wings and sometimes larger formations tempting German fighters into action. Feelings were mixed over this policy, for the RAF was now fighting over enemy territory and pilots lost could not be retrieved. The first Wing Sweep took place on January 9 when two formations totalling five squadrons were employed. By mid-June, 85 such sweeps had been flown ranging in strength from 14 aircraft to 20 squadrons. Fifty-one RAF pilots were lost. Enemy returns showed a total loss of 40 fighters, 18 shot down in combat. Despite losses—including experienced pilots— these operations were wonderful for morale, providing Fighter Command with a daylight offensive role.

Fourthly, there came the scheme whereby small forces of strongly escorted bombers covered and escorted by fighters acted as bait for the Luftwaffe and bombed targets in Northern France. This stage of the offensive opened on January 10, when six Blenheims of 114 Squadron escorted by six fighter squadrons bombed the Fôret de Guines. Three other squadrons swept the Dungeness-Gris Nez-Dunkirk area. There were ten more of these *Circus* operations in the next five months, added to which were 14 escorted attacks on shipping and two on docks, protected in all by 2,700 fighter sorties.

It was evident by June, 1941, when 60 day fighter squadrons (84 fighter squadrons in all) were available for operations, that German forces were moving East with Russia as the obvious target. Therefore, on June 17 it was decided to open larger scale operations including bombing attacks on areas around Lille, Lens, in the Ruhr, on shipping and enemy land communications, and also to employ bigger bait including Stirlings and Hampdens. By December 31, 90 more escorted raids were made, over 100 attacks on shipping. There had then been hundreds of sweeps and fighter strike sorties. Losses were not light and claims much inflated, but the

important thing was that clearly the RAF was building up its day offensive.

Despite these dashing operations, protection of coastal shipping remained Fighter Command's most important task. The only enemy attacks on shore were made by Bf 109 fighter-bombers operating over the south-east from February to July. Thereafter the Luftwaffe continued cloud cover raids by small forces, or individual aircraft, made weather reconnaissance flights and continued attacking shipping. In the second six months of 1941, 28,000 defensive fighter sorties were flown to protect shipping—7/10 of the entire effort. Clearly the Command was fighting largely over the grey sea around our shores.

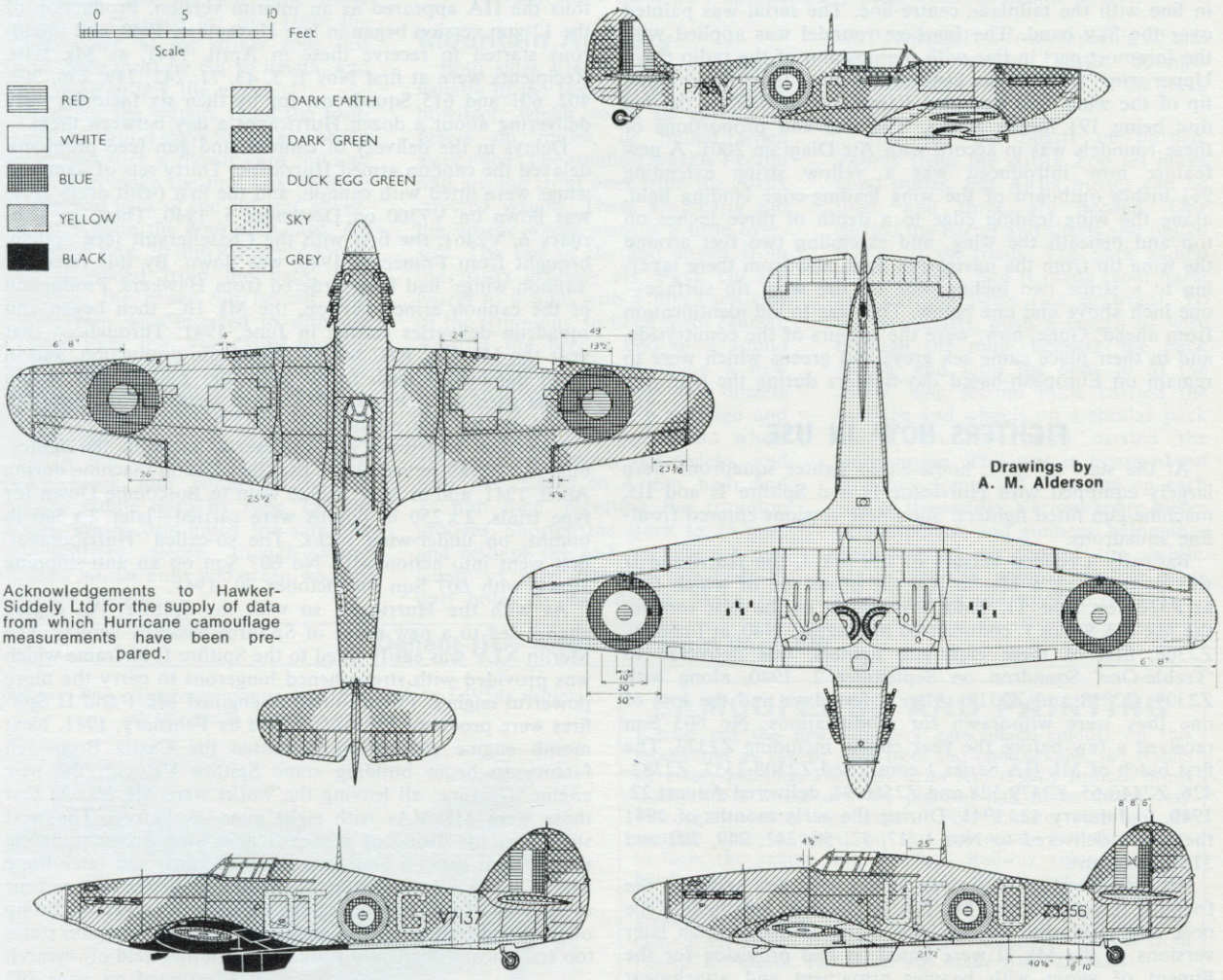
Drawings below: *Hurricane paint schemes as they appeared in the first half of 1941. The under-surface colour is the deep shade of duck egg green, the Sky Type S spinners and bands appearing as much lighter adornments. Note that the code letters remain mid-grey on both V7137 (which has black applied only to the port wing under side) and Z3356. The demarcation lines of the camouflage patterning were very clearly defined on the manufacturer's GA drawings, and a selection of the precise positioning involving marking to the accuracy of ½ inch has been included. UF-O has the black winged sword motif of 601 Sqn on its fin. Exhaust stacks were unpainted. V7137 wears the scheme in use at the start of 1941; the other machine is in the colours it wore shortly before the change to grey and green. YT-C was a Spitfire IIA P7559 of No 65 Sqn in use in the Spring of 1941. 'EAST INDIA SQUADRON' has been painted on the aircraft in white. Note the blunt nose to the spinner.*

THUS, THE COLOURS CHANGE

On May 26, 1941, three Hurricane IIs of No 56 Squadron, North Weald, flew to Duxford for three-day experiments with camouflage for over-water purposes. On the second day, perchance, I saw to my surprise two of them, US-P: Z2586 and US-W: Z2767. Standing by the green-brown-sky machines of 310 Sqn they looked most strange. Their upper surfaces were a very dark shade of grey where once they were green, the brown had been replaced by a rather dark grey and the under surface, too, were dark grey. Whether these colours equated any of future months it is not possible to say. Squadron codes were still light grey.

Back at North Weald the squadron apparently continued tests, for by mid-June all its machines were being experimentally and similarly painted. No 56 Squadron moved to Duxford on June 26, and when I next visited the airfield (on July 13) I counted nine Hurricanes with 'US' coding in Sky

Continued on next page



Drawings by A. M. Alderson

Acknowledgements to Hawker-Siddely Ltd for the supply of data from which Hurricane camouflage measurements have been prepared.

Type S and the colours described, although at least one certainly had dark green in place of the darkest grey. During July the squadron operated on sweeps, and it seems likely that these were the first fighters to go into action wearing the new paint scheme. At the time we called them 'sweep Hurricanes'. They had no Sky adornments, incidentally—at least not at any time when I saw them.

At Hawkers a change of camouflage had also been under review. On July 24, 1941, drawings produced showed the hitherto brown camouflage areas replaced by a shade called 'ocean grey', but possibly what became known as dark sea grey for the true Ocean Grey in use later had a very bluish tone. Dark green was retained, but duck egg green under surfaces changed to medium sea grey. Within the next four weeks the colour changes were again reviewed, and finalised in the case of the Hurricane on August 26, 1941. Fighter Command notified units that the change was to be made on August 21. Hurricanes were now to have an 18 inch wide Sky Type S rear fuselage band and Sky spinner. Squadron codes were also to change to Sky Type S (the true, light shade, that is), and serial numbers still eight inches high and five inches wide were to be applied so that their tops were in line with the tailplane centre-line. The serial was painted over the Sky band. The fuselage roundel was applied with the foremost part in line with the position of the radio mast. Upper wing 'B' roundels, centred 80 inches from the extreme tip of the wing, had an outer diameter of 49 inches, the red disc being 19½ inches across. The size and proportions of these roundels was in accord with Air Diagram 2001. A new feature now introduced was a yellow stripe extending 96¼ inches outboard of the wing leading-edge landing light, along the wing leading edge to a depth of three inches on top and beneath the wing, and extending two feet around the wing tip from the navigation light, and from there tapering to a stripe two inches wide on the wing tip surface—one inch above and one below. This was to aid identification from ahead. Gone, now, were the colours of the countryside, and in their place came sea greys and greens which were to remain on European-based day-fighters during the war.

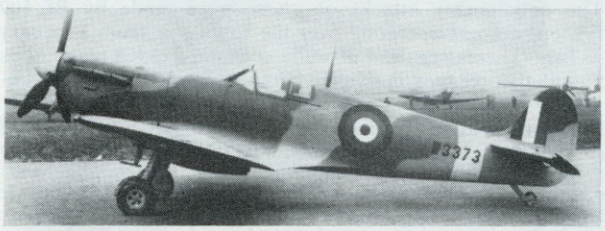
FIGHTERS NOW IN USE

At the start of 1941, home-based fighter squadrons were largely equipped with Hurricane Is and Spitfire Is and IIs, machine-gun fitted fighters. Soon new versions entered front-line squadrons.

Basically a refined version of the Mk 1, the Hurricane II was powered by a Merlin XX the prototype of which flew as P3269 on June 11, 1940. Production of the first version, the Mk IIA Series 1, commenced in August, 1940, at Langley. Z2308, first of these eight-gun fighters, was delivered to 'Treble-One' Squadron on September 2, 1940, along with Z2309, Z2318 and Z2319. After a few days and the loss of one they were withdrawn for modifications. No 605 Sqn received a few before the year ended, including Z2323. The first batch of Mk IIA Series 1 comprised Z2308-2357, Z2382-426, Z2446-65, Z2479-528 and Z2560-94, delivered August 22, 1940, to January 12, 1941. During the early months of 1941 they were delivered to Nos 1, 17, 32, 56, 242, 249, 302 and 310 Squadrons.

An extra fuselage bay seven inches wide was added to the forward fuselage of the Mk IIA in October, lengthening the nose and producing the Mk IIA Series II upon which later versions of the Mk II were based. It had provision for the fitment of wings with heavier armament and attachment





Top: *Spitfire IIA RN-N: P7895 with green-brown-duck egg green finish and grey codes. Note that this machine has the standard shorter fin stripe. April, 1941.* **Above:** *A Spitfire VB, W3373, with grey-green finish. The apparent black outline to the roundel is caused by the use of ortho film.*

points for long-range tanks and various stores. The first machines were earlier IIAs modified, Z2344-47, Z2357, Z2382-85, Z2426, Z2446-47.

At the start of 1940 a 12-gun version of the Hurricane was proposed, but most likely the shortage of Browning guns delayed introduction of this until after the Battle of Britain; thus the IIA appeared as an interim version. Production of the 12-gun version began in late November, 1940, and squadrons started to receive these in April, 1941, as Mk IIBs. Recipients were at first Nos 1, 3, 43, 71, 242, 249, 256, 302, 402, 601 and 615 Squadrons, for by then six factories were delivering about a dozen Hurricanes a day between them.

Delays in the delivery of cannon, and gun feed problems, delayed the cannon armed Hurricane. Thirty sets of damaged wings were fitted with cannon, and the first (with drum feed) was flown on V7360 on December 5, 1940. Then, on February 6, V2461, the first with the Chatellerault feed system, brought from France in 1940, was flown. By this time 100 'cannon wings' had been ordered from Hawkers. Production of the cannon armed version, the Mk IIC, then began and squadron deliveries started in June, 1941. Throughout that year the Mk IIA/B/C was in large scale production, and in small batches of each to no particular pattern and within almost each serial block. BN370 had been reached approximately by the end of the year.

One other Hurricane variant deserves mention, the fighter-bomber. P2989 served as the trial installation machine during April, 1941, and in May, Z2326 went to Boscombe Down for type trials. 2 x 250 lb bombs were carried—later 2 x 500 lb bombs, on under-wing racks. The so-called 'Hurribomber' first went into action with No 607 Sqn on an anti-shipping attack with 607 Sqn on October 30, 1941.

As with the Hurricane, so with the Spitfire. An engine change led to a new range of Spitfires basically similar. The Merlin XLV was easily fitted to the Spitfire II airframe which was provided with strengthened longerons to carry the more powerful engine. Twenty-three re-engined Mk I and II Spitfires were produced by Rolls-Royce by February, 1941. Next month engine production permitted the Castle Bromwich factory to begin building some Spitfire Vs with the new engine. By June, all leaving the works were Mk Vs. At first these were Mk VAs with eight guns, as before. The next stage was the fitting of a special new wing accommodating two 20 mm cannon and four machine-guns, and later there was to come a further new wing able to mount two or four cannon and four .303 inch guns. Possible retrospective fitting of guns and engines soon made the Spitfire modification states too complicated to record fully here. Another field of research

Continued on page 192

MODELTOYS

PLASTIC KIT SPECIALISTS—ASSOCIATE MEMBER I.P.M.S.

A.F.V. kits

Tamiya motorised (B.L. Series)

B 1 M42 Hunter Tank	1/55	9/11
B 2 T92 Destroyer Tank	1/55	9/11
B 3 Crusader Tank	1/55	9/11
B 4 T235 Long Tom	1/55	9/11
B 5 SU57 Stalin Tank	1/55	9/11
B 6 M24 Chaffee Tank	1/55	9/11
B 7 JS111 Stalin Tank	1/35	37/11
B 8 T-55 Tank	1/35	25/11
B11 Chieftain Tank	1/35	37/11
B12 Scorpion Armoured Car	1/35	12/11
B13 Coventry 11 Armoured Car	1/35	12/11
B14 Saladin Armoured Car	1/35	15/11
B15 M8 Armoured Car	1/35	15/11
B18 SU 100 Assault Gun	1/35	19/11
B19 M48 Patton Tank	1/35	37/11
B20 M4 Sherman Tank	1/35	25/11
B21 M4 Sherman Tank	1/21	59/11
B23 PzKw3 Tank	1/21	59/11
B33 AMX 105 F. Tank	1/35	19/11
B50 Rommel Tank	1/35	25/11
B53 75mm Assault Gun	1/21	59/11

Fujimi motorised (B.L. Series)

B56 Tiger 1	1/44	14/11
B57 M48 A2 Patton	1/50	14/11
B58 Comet Tank	1/44	14/11
B59 Commander Tank	1/44	14/11
B60 Japanese Type 61	1/45	14/11

Nichimo motorised (B.L. Series)

B41 Japanese Type 61	1/55	9/11
B42 M4 Sherman Tank	1/55	9/11
B43 M47 Patton Tank	1/55	9/11
B44 JS111 Stalin Tank	1/55	9/11
B45 M48 Patton Tank	1/55	9/11
B46 Tiger 1 Tank	1/55	9/11

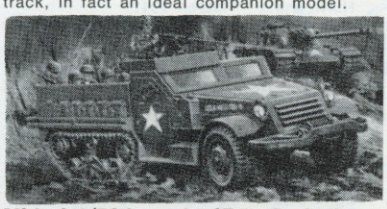
L.S. motorised (B.L. Series)

B26 Abbot SP Gun	1/35	24/6

Nitto 1/35th scale motorised (B.L. Series)

B51 US Army Half Track	19/11
B52 US Army Personnel Carrier	19/11

Same style and quality as the US Army half-track, in fact an ideal companion model.



Midori 1/76th scale (B.L. Series)

B34 T-54 Russian Tank	2/11
B35 Stalin 111 Tank	2/11
B35 Wilvel Wind AA Tank	2/11
B37 M.48 Patton Tank	2/11
B38 Tiger Tank	2/11
B39 75mm Assault Gun	2/11
B40 PzKw V Panther Tank	2/11

Aurora

Churchill Mk. 111	1/48	12/6
Swedish 'S' Tank	1/48	12/6
M 109 Tank	1/48	12/6
Centurion Tank	1/48	12/6
Stalin Tank	1/48	12/6
Tiger Tank	1/48	12/6
Japanese Medium Tank	1/48	12/6

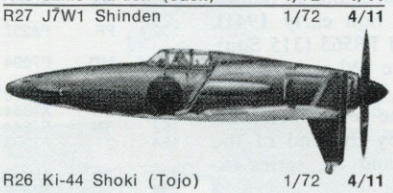
Tamiya remote-controlled—2 motors (B.L. Series)

B22 M4 Sherman Tank	1/21	99/11
B24 PzKw3 Tank	1/21	99/11
B25 Big Shot	1/21	99/11

Aircraft kits

Tamiya (R.L. Series)

R25 J2M3 Raiden (Jack)	1/72	4/11
R27 J7W1 Shinden	1/72	4/11



R26 Ki-44 Shoki (Tojo)	1/72	4/11

Fujimi (R.L. Series)

R47 F8D Crusader	1/70	9/11
R48 Northrop T-38	1/50	12/11
R49 UH-IB Iroquois	1/50	13/11

L.S. (R.L. Series)

R18 Oscar Mk. I	1/75	4/11
R19 Oscar Mk. II	1/75	4/11
R23 G3M3 Nell Bomber	1/72	19/11
R46 G3M1 Nell T. Bomber	1/72	19/11
R45 L3Y1 Nippon Go	1/72	19/11

Aosima (R.L. Series)

R 5 C6N1 Myrt	1/72	4/11
R 6 Shiun (Norm)	1/72	4/11
R 8 Ki-100	1/72	4/11
R11 M6A1 Seiran	1/72	4/11
R13 A7M Reppu (Sam)	1/72	4/11

Nichimo (R.L. Series)

R40 P-51D Mustang	1/48	12/11
R41 A6M5 Zero	1/48	12/11
R42 Zero Mk. 52 (de-luxe)	1/35	23/9
R43 NIK2 George (de-luxe)	1/35	23/9
R44 P-51D Mustang *	1/48	19/11

* De-luxe in clear plastic.

Heller

Bloch 152 D520. MS406	1/72	5/11
Amiot 143	1/72	15/11
Bloch 174	1/72	15/11
Breguet 693	1/72	15/11
Leo 451	1/72	15/11

Monogram

F8F Bearcat	1/72	9/–
Curtiss P-36	1/72	9/–
P-51B Mustang	1/72	9/–
A-1E Skyraider	1/72	13/9
F7F-3 Tigercat	1/72	13/9

Aurora

Avro CF100	1/70	12/6
Halberstadt CL-2	1/48	12/6
Breguet 14	1/48	12/6
Albatross C3	1/48	12/6
C.119A Packet	1/75	32/11
Sopwith Triplane	1/48	12/6
Fokker Eindecker	1/48	12/6

Inpact

G. Gladiator	1/48	8/8
H. Fury	1/48	8/8
B. Bulldog	1/48	8/8

Hawk

Lysander	1/48	13/9
Bearcat	1/48	13/9
OV-10A—plated	1/48	27/6
F-5A—plated	1/48	27/6
Spitfire Mk. 22	1/72	5/–

Frog

P-38J/L Lightning	1/72	3/7

Airfix

Heinkel HE 177 Grief	1/72	8/6
G.D. F111	1/72	7/–

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Ships

Aurora

Wolf Pack U Boat	12/6
U.S.S. Iowa	17/6
King George V	17/6
U.S.S. Guadacanal	17/6

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Humbrol Flatting Agent **2/– tube**
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investigated was the addition of long-range tanks. First externally carried took the form of large slippers fitted to the outboard section of the port wing. Nos 66, 118 and 152 Squadrons used Spitfires thus modified for patrols off south-west England, and they were useful for convoy escort work. No 66 Squadron's aircraft at the end of 1941, Mk IIAs with these tanks, included P7607, P7999, P8072 and P8430.

To ensure that squadrons in the front line had the latest equipment, the newer Spitfires were based at the southern stations, so that when squadrons moved south they exchanged their old for the new, and left them behind when taking rest periods.

Some of the first cannon-armed Mk Vs were the old Mk IBs used unsuccessfully during the Battle of Britain by No 19 Sqn. They included R6809, R6833, R6923 and X4272, all of which served with No 91 Squadron at Manston in the early months of 1941. One of these, X4272, is believed to have been the first Mk VB to destroy enemy aircraft, a He 111 shot down off Southend on February 3, 1941.

Many of the earliest conversions to Mk V standard were of Mk Is or IIs re-engined but not re-armed and re-named Mk VA. These included N3044 (to 145 Sqn early 1941), P7447 (to 66 Sqn), P8236 (to 266 Sqn) and P8563 (315 Sqn). The first main batch of Mk Vs came in the 'W' serial range, of which W3109-14, '18, '19, '21, '23, '30, '36, '38, '69, '84, '85, 3213, '16, 3379 were Mk VAs and the remainder VBs. Delivery began on April 30, 1941, and by the end of the year Spitfires in the AA, AB, AD, AR and BL series (to about BL600) had been delivered.

SQUADRONS AND THEIR AIRCRAFT

The following listing is of home-based day-fighter aircraft and squadrons during 1941. Examples dated pre-August can be safely assumed to have brown-green-duck egg green finish. Those post-September can be accepted as having the ocean camouflage scheme. Usually unit letters were painted forward on the port and aft on the starboard side on the fuselage, but there were frequent exceptions even on individual squadrons.

Sqn	Letters	Example	Aircraft type	Notes/dates, etc
1	JX	Z2810	Hurricane IIB	March 1941
1	JX	Z23778:Y	Hurricane IIC	December 1941
3	QO	Z2885:F	Hurricane IIB	May 1941
3	QO	Z3068:C	Hurricane IIC	October 1941
17	YB	Z2497	Hurricane IIA	March 1941
19	QV	P7995	Spit IIA/LR	Wing slipper tanks, August 1941
19	QV	AD332	Spitfire VB	November 1941
32	GZ	V7425	Hurricane IIA	January 1941 (half black wing)
41	EB	P7618:Z	Spitfire IIA	Early 1941
43	FT	Z3134	Hurricane IIB	April 1941
46	PO	V7443	Hurricane IIA	February 1941 (to Middle East July 1941)
54	KL	P7618:Z	Spitfire IIA	Mid 1941
56	US	Z2664:O	Hurricane IIA	March 1941
64	SH	W3248	Spitfire VB	December 1941
65	YT	P8147:W	Spitfire IIA	March 1941
66	LZ	X4331	Spitfire 1	March 1941
71	XR	V6919:T	Hurricane 1	April 1941
71	XR	BL382:J	Spitfire VB	December 1941
72	RN	X4486:C	Spitfire 1	February 1941 (half black wing)
72	RN	P8517:N	Spitfire IIA	May 1941
72	RN	W3437:A	Spitfire VB	September 1941
73	TP	Z4697:G	Hurricane 1	June 1941
74	JH	W3210	Spitfire VB	May 1941
79	NV	Z3156:F	Hurricane IIA	June 1941
91	DL	P7735	Spitfire IIA	February 1941 (half black wing)
91	DL	W3126	Spitfire VB	May 1941
92	QJ	R6923:S	Spitfire VB	June 1941
111	JU	P8191	Spitfire IIA	July 1941
118	NK	P7913:K	Spitfire IIA	Dec 1941 (Sqn reformed February 1941)



Above: *A most interesting line-up of Hurricanes of No 56 Sqn almost certainly photographed during the change-over to grey-green paintwork, perhaps during an advanced stage of trials. 'K' nearest (possibly Z3352?) can be seen to have a very narrow code letter. The next machine may have a wider Sky band than usual—and it has a very narrow yellow surround to its fuselage roundel. The Z3 . . . serial has been over-painted. Z3169 : US-O is next in line. Its 'US' coding is small and a medium shade of grey, as was seen on 56 Squadron's aircraft in June, 1941. This machine, too, has the narrow fuselage ring, and it seems to have a pale grey section to its paint scheme on the nose. When 56's Hurricanes reached Duxford in August, 1941, they had small code letters.*

Sqn	Letters	Example	Aircraft type	Notes/dates, etc
122	MT	AA930	Spitfire VB	Dec 1941 (Sqn reformed May 1941)
123	XE	BL373	Spitfire VB	Dec 1941 (Sqn reformed May 1941)
124	ON	R7074	Spitfire IIA	May 1941 (Sqn reformed May 1941)
129	DV	W3824	Spitfire VB	Sept 1941 (Sqn reformed June 1941)
130	PJ	BL712:X	Spitfire VB	Early 1942? (Sqn reformed June 1941)
131	NX	AD411:B	Spitfire VB	Dec 1941 (reformed June 1941)
132	FF	P8257	Spitfire IIB	Dec 1941 (reformed July 1941)
133	MD	P7994	Spitfire IIA	Sept 1941 (reformed August 1941)
137	SF	P6972	Whirlwind 1	November 1941
145	SO	X4854:A	Spitfire VB	May 1941
152	SN	P7844	Spitfire IIA	March 1941
154	?	P7983	Spitfire IIA	November 1941 (Sqn formed November 1941)
222	ZD	AB140:F	Spitfire VB	December 1941
232	?	P3422	Hurricane 1	February 1941
234	AZ	W3936:W	Spitfire VB	October 1941
234	AZ	P7925:W	Spitfire IIA	May 1941
242	LE	Z2513	Hurricane II	April 1941
245	DX	Z3237	Hurricane IIB	October 1941
247	ZY	Z2572	Hurricane IIA	July 1941
249	GN	Z2522	Hurricane IIA	March 1941 (Sqn to Malta 1941)
253	SW	V7619	Hurricane 1	February 1941
257	DT	V6873:O	Hurricane 1	December 1940 (half black wing)
263	HE	P6969:V	Whirlwind 1	July 1941
266	UO	W3828	Spitfire VB	December 1941
302	WX	Z3023	Hurricane IIB	May 1941
303	RF	V6637	Hurricane 1	January 1941
303	RF	P7962	Spitfire IIA	April 1941
306	UZ	Z3065	Hurricane IIB	May 1941
308	ZF	W3825	Spitfire VB	September 1941
310	NN	P3148:N	Hurricane 1	March 1941
312	DU	V6885:V	Hurricane 1	January 1941 (half black wing)
313	RY	R7117	Spitfire IIA	May 1941
315	SZ	W3761	Spitfire VB	September 1941 (formed January 1941)
316	PK	AA928	Spitfire VB	November 1941 (formed February 1941)
317	JH	AD367	Spitfire VB	December 1941 (formed February 1941)
331	FN	Z3987	Hurricane 1	September 1941
340	GW	P7915:J	Spitfire IIA	December 1941
350	MN	P8146	Spitfire IIA	December 1941
401	YO	AA973	Spitfire VB	December 1941
402	AE	BE492:E	Hurricane IIB	November 1941
411	DB	AD356	Spitfire VB	November 1941
412	VZ	AD318	Spitfire VB	October 1941
416	DN	AB370	Spitfire VB	December 1941
452	UD	AB792	Spitfire VB	September 1941
457	BP	X4023	Spitfire 1	September 1941
485	OU	AD355	Spitfire VB	October 1941
501	SD	X4854:G	Spitfire IIA	May 1941
501	SD	AB279:G	Spitfire VB	December 1941
601	UF	V7104:B	Hurricane 1	January 1941 (half black wing)
601	UF	BD712:Y	Hurricane IIB	September 1941
602	LO	AA942	Spitfire VB	December 1941
603	XT	AB134	Spitfire VB	December 1941
605	UP	Z4969:O	Hurricane IIA	March 1941
607	?	Z3082	Hurricane IIB	September 1941
609	PR	W3238:B	Spitfire VB	June 1941
609	PR	W3117	Spitfire VA	April 1941
610	DW	AA975	Spitfire VB	December 1941
611	FY	W3816	Spitfire VB	September 1941
615	KW	Z3028	Hurricane IIB	August 1941
616	YQ	W3560	Spitfire VB	September 1941

MOTORISING THE DB5

By Geoff Snell

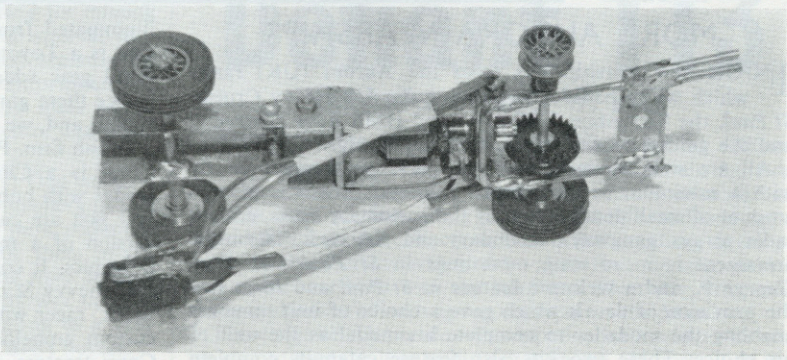


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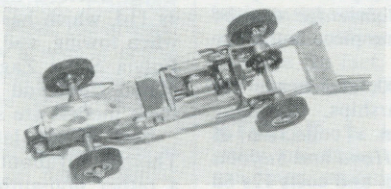
IN slot racing circles there is quite a lot of argument as to whether a fall-away guide is better than steering or vice-versa and this has yet to be settled. As motorisation of the Airfix Aston-Martin DB5 was due for coverage it was felt that this provided an opportunity to show how a fall-away guide type of chassis could be constructed using MRRC components.

The first step is to make the front chassis extension for the MRRC motor. This is made from brass sheet to the dimensions shown in the diagram and fixed to the front of the motor with 8 BA nuts and bolts. The front axle is made from 3/32 inch silver steel and the wheels positioned with brass tubing on the inside and 8 BA washers soldered in position on the outside. The front wheels, MRRC $\frac{7}{16}$ inch diameter with 25/32 inch tyres as on the back, should be reamed out with a drill if necessary to allow them to turn freely.

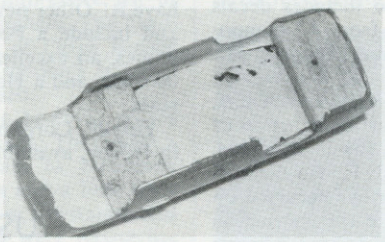
The next and most difficult step is to make up the fall-away arm. A 3/32 inch diameter hole is drilled in each side of the motor U-bracket as far forward as possible and pieces of 3/32 inch diameter silver steel are bent to the dimensions shown in the diagram. 8 BA washers are soldered in position at the rear end and a piece of $\frac{1}{8}$ inch square brass is soldered between the arms at the front end with these in position. A powerful soldering iron is required for this job. A $\frac{1}{16}$ inch diameter hole is then drilled through the brass to accept the pivot of the MRRC slot guide as fitted to the 4WD cars. Ensure that the arms pivot freely then fit the guide and, allowing enough for the guide to pivot, tape the flex to the arms of the guide and solder to the motor brushes.



2



3



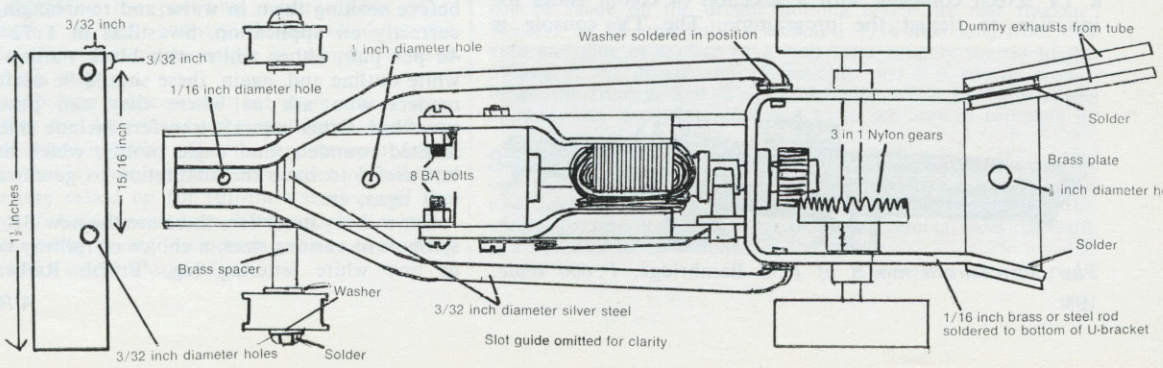
4

Now fit the rear wheels to give a track of $1\frac{1}{2}$ inches and the chassis is ready for track testing. The rear chassis extension should now be made to the dimensions shown, and the dummy exhausts made from small brass tubing positioned to correspond with the cut-outs in the car body.

Now take the windows of the car and, using these as a template, cut a piece of polystyrene sheet or cardboard for a driver's platform. Stick the driver to this, paint the platform matt black and the driver as preferred, then stick windows and platform into the body. When this has set, cut out two balsa wood blocks to fit the front and rear of the car. The rear one should be deep enough to give the rear wheels the right 'sit' in the body and the front one should be recessed to take the front of the chassis and allow clearance for the front wheels. When the correct 'sit' has been obtained, coat the blocks with polystyrene cement where they will touch the body and allow this to dry. Then give another coat of cement and stick them into the body. When they have set, drill small holes in the blocks to correspond with those in the chassis, which should now be retained with self-tapping screws. A touch of balsa cement put in the holes immediately before fitting the screws will assist in forming a good thread.

All that now remains is detail body finishing according to one's own preference. If it is felt that this chassis is a little difficult to make, an MRRC adjustable front end can be used in place of the fall-away guide and will still provide acceptable roadholding.

Picture key: (1) The completed 1:32 scale DB5 model with MRCC wheels and motor. (2) Chassis from beneath. Compare with drawing. (3) Top view of chassis. Note brass front extension. (4) Balsa mounting blocks in body and platform for driver from plastic card.



NEW KITS AND MODELS

MORE AURORA WARSHIPS

FOUR new warship kits from the Aurora (UK) range which we've had for review are the US Heavy Cruiser *St Paul,* the battleships USS *Iowa* and HMS *King George V* and the guided missile frigate USS *Bainbridge.*

All are well produced and the parts go together neatly with a minimum of flash to be removed. There is a large amount of small detail including the customary boats, cranes, radar arrays, gangways, secondary and AA guns. The main armament is in rotating mountings in *St Paul* and *King George V,* and a welcome feature in *St Paul* and *Iowa* was the provision of decals which gave a choice of unit numbers enabling the modeller to complete his model as the unit of his choice. These two kits also feature catapults complete with aircraft. The rocket launchers in *Bainbridge* can be loaded with their 'Terrier' missiles and one-piece hulls are a feature of the US Navy ships.

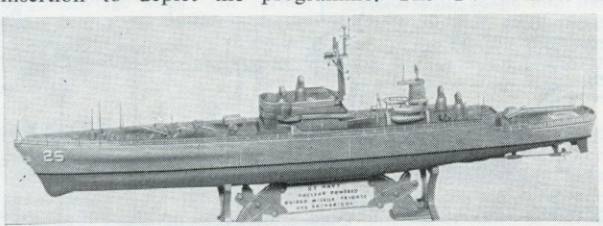
The models are all to a scale of 1:600, and hence are welcome additions to this range of warships, the *King George V,* particularly, merits a place in a collection of Airfix kits, as a companion to the *Bismark, Hood* and *Suffolk.*

The *St Paul* has 87 parts and a decal sheet and costs 12s 6d as does the 82 part *Bainbridge,* which also includes decals for the deck markings. The *Iowa* is built from 83 components whilst the *King George V* has 116 pieces to assemble. The battleships cost 17s 6d each.

The instruction sheets are bi-lingual as in all Aurora kits, and a recent improvement in these has been the inclusion of painting instructions to supplement the box top illustrations, and the specification and history of the ships is also detailed for the three US units. An unfortunate error has occurred on the sheet for USS *Iowa,* as the illustration on the instruction heading is of the *Bismark*! However, this in no way detracts from the kit. *I.W.*

LATEST CAR MODELS

SINCE our last round-up of the latest on the die-cast market, new releases have appeared thick and fast for the Christmas market. Most luxurious is most certainly the beautiful Lincoln Continental Executive with Lehmann-Peterson bodywork from Corgi at 14s 11d. This has a polychromatic gold finish, four opening doors, opening boot and bonnet, detailed interior, jewelled headlights, 'chrome' trim, and purple pile carpets in the boot and interior. It also boasts a TV screen complete with a selection of colour slides for insertion to depict the programme. The TV console is illuminated from a battery which fits in the chassis. Also new is a Toyota 2000 from Corgi which has lots of James Bond gear added, like bombs in the boot. Collectors who ignore these gimmicks, however, still get an excellent Toyota replica and, we think, the first model of a Japanese car from a British firm. Price is 9s 11d. Topical model for winter from Corgi is a Citroen DS19 finished as a Winter Olympics tender with bobsleigh, bob driver, skis, and skier. The sleigh and skis are carried on the roof rack. This is an up-dated version of a model originally released for the last Winter Olympics. It costs 7s 11d. Another 'old' Corgi re-released is the Chevvy Stingray which now appears as a nicely finished 'stock' racer with sponsor transfers, competition wheels, and custom embellishments. This costs 6s 3d. To go with the Corgi tractors, there is now a very realistic disc harrow, at 4s 11d, which has a lever to raise the discs from the ground when towing, and finally another new car model is a Lancia Fulvia Sport Zagato with opening doors, opening bonnet, plated trim, and a particularly good finish for 6s 9d. All these models are scaled between 1:45 and 1:48.



The new Aurora model of USS Bainbridge, *1:600 scale.*

Best of the latest Lesney releases is a very fine 1909 Thomas Flyabout to 1:48 scale, beautifully detailed but in a rather non-authentic finish. At 5s 6d, it's a crime not to have it! Other new Lesneys are all in the 2s Matchbox range and include a Pony Trailer with opening tailgate and two ponies, an excellent Mercedes 300SE with opening doors to 00 scale, and a Honda racing motor-cycle and trailer to 1:41 scale.

Finally, Corgi have produced their new 1967-68 catalogue in colour, available at 6d from model car stockists. *C.O.E.*

USEFUL TRANSFERS

THE bus modelling article in our September, 1967, issue made mention of the wide range of transfers available from J. V. Short, 31 Pevensey Road, Eastbourne, Sussex, and we've now had the chance to examine samples of all the various sheets available. It transpires that there are plenty of very useful transfers in this range which should interest aircraft, military, railway, *and* bus modellers.

For instance, there is a set of six 1:72 scale Czech Air Force markings for only 6d, the only snag being that they are all printed the same whereas they should be laterally inverted, port and starboard. This is no great problem, however, as it is a simple matter to cut the roundels into segments before soaking them in water and re-arranging the segments correctly on application. Swastikas in 1:72 scale come at 4d per pair, either white with black outline or black with white outline and, again, these should be useful for all those readers who ask us where they can purchase separate swastikas. Other aircraft transfers include shield motifs, segmented roundels, and eagle motifs, which are all fictional but useful to have for adaptation to geschwader badges or unit signs, etc.

For railway modellers there are the new BR Double Arrow symbols in various sizes, a choice of railway company names in tiny white lettering (eg, 'British Railways', 'Midland

Railway') for application to road vehicles, etc, not to mention lettering, crests, Zebra crossing marks, and roadsigns. For bus modellers there is a prodigious range of fleet names and destination boards in various scales, mostly 00, and some excellent bus-side adverts, most of which are also adaptable for poster hoardings and stations. We would say that *all* modellers should have Mr Short's free catalogue since items in the range are useful for most requirements. Catalogue and transfers are available by post only and a SAE or postage must be included with orders. *C.O.E.*

REVELL KITS

AMONG recent Revell releases have been a new ship kit and two 1:25 scale car kits. *Mayflower* is the ship kit and this is one of the most detailed yet from Revell, complete with vacuum formed sails, pre-formed ratlines, blocks, and rigging lines. The model is, in fact, a replica of the full-size replica which was built at Brixham in 1956 to repeat the 1620 Atlantic crossing for which the original vessel is remembered. We were impressed with the quality of the moulding of this model which is nicely priced for shiplovers at 16s 2d.

The cars are also of excellent quality, and novel model subjects, being replicas of the 1951 Ford Anglia and the Ford Thames van equivalent. In fact, these are dragster versions of these well-known cars complete with hefty Olds V-8 engines and masses of customising options and transfers. As the kits come, you can't make these as standard production vehicles, but we feel sure that a lot of British modellers will find suitable wheels and other parts from the scrap-box to enable them to do so. We made our Anglia sample up as a plain black standard 'Fred' and, with its opening doors, it makes a charming contrast to the more exotic cars which form most kit subjects in this scale. These car kits cost 22s 10d each. *C.O.E.*

HURRICANE KIT

ERNEST BERWICK LTD, 11A Newland Street, Kettering, Northants, have recently sent us a review sample of the Keil Kraft Hurricane kit, supplies of which are once more available. This is by no means a new kit, being first issued in 1959-60, but it has been scarce or unobtainable for some time so will be new to many modellers. When new it was considered far and away the best Hurricane kit on the market, and even today it sets a remarkably high standard. Surface detail is commendably discreet—with *flush* rivets—the undercarriage retracts, which is unusual for 1:72 scale, ailerons and rudder are separate components, and all parts fit together very well. The aircraft depicted is the cannon-armed IIC, specifically *The Last of the Many*, PZ865. The transfer sheet, however, leaves something to be desired since it has 'B' type instead of 'C' type roundels. From the strictly dimensional point of view the model is a little too wide in the rear fuselage and has a radiator slightly over-scale. It does, however, depict the true rugged character of the Hurricane IIC and is a snip at 3s, postage extra.

We often get queries on the source of the Yeoman lettering and solid colour transfer sheets which are mentioned in many of our aircraft conversion articles. Subject to availability, stocks are now held by Ernest Berwick Ltd. Red, blue, black, yellow, and white sheets of solid colour cost 5d per sheet and alphabet sheets come in $\frac{1}{8}$ in, $\frac{1}{4}$ inch, $\frac{3}{8}$ inch, $\frac{1}{2}$ inch, $\frac{3}{4}$ inch, and 1 inch depths also at 5d per sheet, in the same range of colours, though black and white are not at present available in $\frac{1}{4}$ inch. Postage is extra. *C.O.E.*



Revell's finely detailed Mayflower *model—makes up into an impressive replica of this famous ship.*

NEW TANK KITS

YOUNGER modellers in particular should be interested in a range of five Fujimi kits imported by BMW Models of Wimbledon in their Blue Label range. These are models of the British Comet, the Tiger, M48 Patton, Japanese M61, and what the box describes as a 'Commander' but which turns out to be a Charioteer. These are fairly simple motorised kits which operate on two penlight batteries (not supplied), with a forward/stop/reverse switch in the chassis. Of these the Patton and M61 are by far the best, but the Comet is reasonable if you are prepared to work on it a little to overcome errors in the turret shape and fittings. The Tiger is not unacceptable at first glance but proves to be too narrow on further examination. The Charioteer is simply the Comet with a new turret and gun. This is unfortunate, as the Charioteer was, of course, a modernised Cromwell and not a Comet. The sample we made up was the Comet and this has a spring-loaded gun which fires shells, supplied in the kit. Also included in all these kits is a set of US infantrymen. Price of each kit is 14s 11d and the scale is 1:44, making them as near as makes no difference compatible with 1:48 scale tank models.

Nitto's latest release is a superb 1:35 scale M3 Half-track, a scaled up version of the Airfix model. This is to the standards of the very best military kits from Japan and is motorised with the electric motor actually sited under the bonnet and the batteries (not supplied) under the floor at the back. Front wheels have rubber tyres and track-rod steering, drive is to the sprockets in prototype fashion, and rear tracks are rubber. Detailing is impeccable, and the kit is highly commended at 19s 11d. It is also available from BMW Models who supplied our sample.

We've also received samples of BMW's Modelcolor paint range of authentic colours which come at 2s per tin. There are now 66 matt colours available and we'll be reviewing these later. Though they are intended for aircraft modellers, we noted several shades of interest to military fans. U3 Olive Drab is excellent for US and British tanks, F7 Dark Grey is quite close to German dark grey for tanks, J1 Japanese Jungle Green is excellent for Japanese tanks, and L4 Sand-Yellow and 57 Pink are excellent for desert vehicles, the latter for LRDG and SAS transport. *C.O.E.*

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Letters to the Editor

Letters to the Editor selected for publication entitle the senders to each receive a free Airfix plastic construction kit of their choice. We are always pleased to receive your comments and pictures, which will be considered for publication. Submitted material and pictures can only be returned if accompanied by a stamped addressed envelope, and the Editor cannot accept responsibility for safe keeping of any such contributions, neither does he necessarily agree with comments expressed by correspondents in the letters columns.

Plastic v. solids

MAY I add my comments on the plastic v. solid controversy? I agree that for conversions and scratch building we should stick to plastic wherever possible. Of course, for the smaller types at least, the fuselage is the problem – and the only problem. The rest can usually be done from sheet plastic and the scrap-box. I have not tried moulding, but should imagine it is very tricky and requires a balsa mould anyway.

I have successfully found two solutions for smaller models. The first is to build up the fuselage from layers of thick plastic sheet, leaving the cockpit space as I go along. This would take an article to describe in detail, but is more easily done than described.

The other easier and very successful method is to find a kit or old model with a fuselage that will do for another with suitable filing and altering, eg, the Fokker Triplane to Fokker D.6.

J. Burrows, Southall, Middx.

Chrome finish

LOOKING through the September 1967 edition of the AIRFIX magazine, I noticed that reader M. J. Chitty of Sittingbourne, Kent, asked that Airfix chrome more of their kit parts. This set me wondering how many readers had heard of the Chrome Aluminium spray paint that is produced by DUPLICOLOR? I have had some very good results with this, especially if one picks out all the parts that need chroming (and usually these are on one runner anyway, like radiator grille, wheel inserts, engine parts) and sprays these on the sprue. The finish is good and it saves all the mess of having to use silver paint which never looks right anyway, and is messy into the bargain. I hope that this information will help others who like me like to do a good job but have been having a hard job finding the right paint.

John Crocker, Camborne, Cornwall.

Positioning transfers

WHEN placing transfers on my models, I sometimes get into difficulty with the transfers sticking to my fingers. I've found a good way of applying transfers is to use an old roll-on deodorant applicator. Remove the plastic ball, fill the container with water and replace the ball. The transfer is then placed neatly in the desired position by rolling it with the dampened ball.

G. Barber, Merthyr Tydfil, Glam.

Black Widow wheels

RECENTLY I bought an Airfix Black Widow, which I made last week. Readers may be interested in this process for making the undercarriage movable.

Before assembly the lugs on the main undercarriage legs (46, 51) should be filed down until they are the same diameter as the pins on the other side of the undercarriage legs, and exactly opposite. Then the wheel halves are cemented together, the hubs put through the middle and cemented to the undercarriage legs. The undercarriage legs are then fitted in the right boom halves, and the boom halves fitted, but *not cemented* together. The wheels are then pushed up into the booms and marked around with a pin. Then the undercarriage legs are removed from the booms and the shapes marked out on the booms are filed away. When this is done the booms are fitted on to the wings, and the holes are marked on to the wings. The holes marked on the wings should now be cut out. This can be done by drilling a series of holes inside the marks and paring off the plastic with a ¼ inch firmer chisel. The doors are now Sellotaped on from the inside, for all undercarriage legs. If the undercarriage has been lowered the front undercarriage leg is pressed into its locations. If the undercarriage has been raised the front undercarriage leg is removed and the undercarriage doors are pushed into a raised position.

F. D. Barton, London, SW11.

U-2 identified

THE Lockheed U-2 shown in the March, 1967, Photopage is from the 57th Weather Recce Sqn, USAF. The 57th is responsible for assistance and support of the U-2 operation by OL-11 (Operating Location 11), 4080 Stratosphere Reconnaissance Wing, Strategic Air Command.

G. Gunst, Melbourne, Australia.

Wrong date

WITH reference to the statement on page 108 of the November, 1967, issue a claim is made that 'Sailor' Malan flew R6757 on June 31, 1940. He must have been a clever pilot, as I think there are only 30 days in June!

J. H. Rowdale, Rugby, Warwicks.

Quite right; our mistake. We meant June 30.—EDITOR.

Tiger tracks

RECENTLY I bought an Airfix kit of the Tiger tank and found after assembly that the tracks did not lie on the top of the road wheels as they should, but formed an almost straight line from sprocket to idler. To overcome this and improve the appearance, I cut a thin piece of plastic card to fit between the hull overhang and the top run of the track, so forcing it down on top of the wheels. When the strip of plastic card is painted the same colour as the rest of the vehicle it becomes virtually invisible. It is, of course, also shaded by the hull top.

David Sleigh, Aberdeen.

Finnish Fiats

REGARDING Mr King's article on Fiat finishes in your June issue and Mr Gibson's letter in the August issue, I regret to say that both are partly wrong. Although our Fiats were of late G.50 origin, almost half of them already sported the lower and wider vertical tail of the G.50 bis. So have no fear, there will be no incorrect models built, whichever tail you choose! The main thing is, of course, to put the correct identification number to the correct tail. High-tailed G.50's were, for example, FA-6, FA-17, and FA-34. The lower 'bis' tail was carried by FA-3, FA-2 and FA-26. Mr King's drawing of FA-26 is therefore correct, but the accompanying picture cannot show that aircraft. Also, the colour scheme suggested is misleading. Some of the Fiats, among them FA-26, were still flying and fighting in their original 'sand-and-spinach' delivery scheme as late as the beginning of 1942. Others were already painted in the usual continuation war black/green camouflage in Spring, 1941. But none of the aircraft were ever finished in the suggested uniform dark green so far as I know. The aircraft in original Italian livery had their factory numbers in small black lettering visible in front of the horizontal stabiliser, but higher than shown, in line with the identification. For FA-26 this number was 4743, without the 'MM' suffix. Finally, spinners were not used on our Fiats until the Spring of 1942. By that time there also appeared an antennae mast on the aircraft, first on top of the fairing just behind the cockpit but soon re-positioned in front of the cockpit, on the right hand side and at the panel denoting the aft part of the gun bay.

Borje Hielm, Restend, Finland.

Exhaust stains

HAVING read AIRFIX magazine for many months, I cannot recall ever seeing any mention of painting exhaust stains on aircraft or tanks, and I feel the method I use may be of interest.

A tiny quantity of matt black paint is mixed with a larger quantity of thinners so that a very thin black solution is achieved. This is then painted round exhaust manifolds as required. It is essential to ensure that the basic paint scheme of the model is perfectly dry, however,

Continued on next page

before applying the staining – otherwise the thinners may also dissolve the original paintwork.

R. G. Pring, Taunton, Somerset.

Accurate Mustang

AN accurate P-51 is a must on any shelf containing World War 2 model aircraft. For some years, however, my Airfix Mustangs, and those in even the best collections I've seen, have suffered from canopy profile inaccuracies. I recently discovered a simple solution which went a long way towards closing my 'Mustang gap'.

Armed with the knowledge that transparent plastic can be reshaped with fine sandpaper and polished back to absolute clarity with a compound as unsophisticated as toothpaste, I removed the original frame lines and sanded the aft portion of the canopy into a sharper teardrop shape. Then, using a Mustang photo as a guide, I applied thin strips of tape for the new vertical frames, and painted in part of the anti-glare panel. Painting this area, as well as that wide frame around the bottom of the sliding hood, seems to add depth to the fuselage, and gives the canopy much better proportion. The enclosed photo shows Capt Bockay's *Ace of Clubs*, with the new canopy, added cockpit detail, fin strake, and modified radiator.

Mustangs often wore elaborate colour schemes which can be a joy to reproduce with the help of a few short cuts. Whenever possible, I use decals from those solid colour sheets rather than attempting to apply light colours over dark or silver paint. In the cowl and invasion stripe areas of the Mustang, I first painted everything the dark base colour, and applied decal checks and stripes as applicable. This is fairly straightforward for flat surfaces, but for striping around the curved fuselages of Mustangs. Mosquitos, Beaufighters, etc. I don't even attempt to pre-cut a decal to exact shape. Instead, I roughly cut out a decal large enough to wrap around the curve and cover the entire area of the stripe. I then apply it to the prepainted fuselage, cut the decal stripe to exact shape with a razor blade, and peel away the excess.

Capt. Duncan Wilmore,
Offutt AFB, Nebraska, USA.

'Belling'

IN Michael Blake's Civil War artillery article, I was somewhat perplexed by the reference to 'belling' and 'cheeks'. Could you please explain?

T. Taylor, Bristol 9.

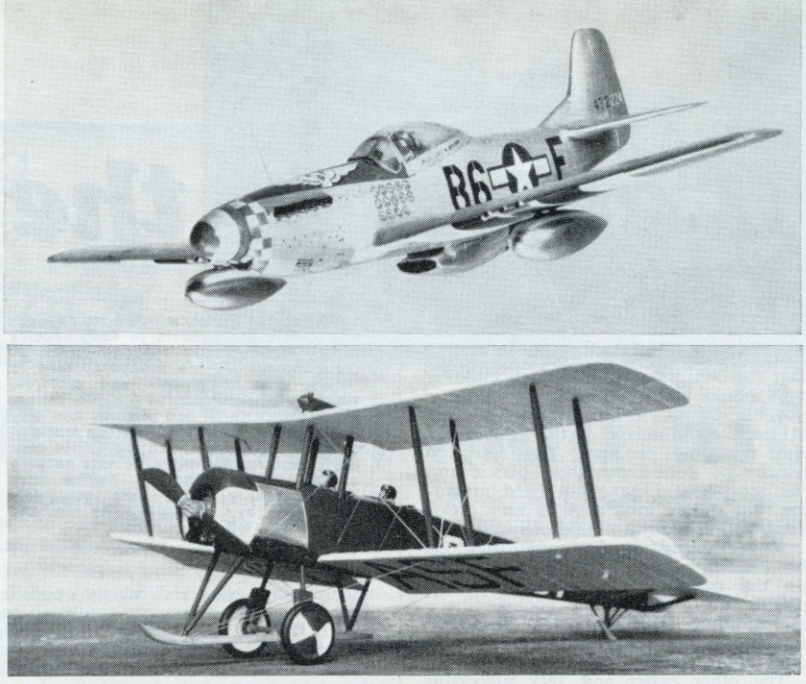
Several readers asked this question. 'Belling' is a descriptive term for the flared shape of the muzzle; the 'cheeks' are the parts on the carriage where the trunnions fit.—EDITOR.

Zimmerit

READERS may be interested in my method of depicting the German 'Zimmerit' anti-magnetic mine paste which was coated on their AFVs.

First, cover the areas to be treated with plastic putty and then smooth this down until a relatively flat thin surface is obtained. Wait until it begins to harden but is still pliable and then lightly run the smallest teeth of a small comb over the surface, leaving a ripple effect. Then allow to dry. If you are not satisfied with the first attempt smooth it over and try again.

M. Walton, Carshalton, Surrey.



Top: *Capt Duncan Wilmore's very fine Airfix Mustang kit finished as* Ace of Clubs *showing the simple canopy and radiator improvements described on this page. Windscreen treatment is specially effective.* **Above:** *Peter L. Gray's Avro 504K finished in green and white as the civilian G-EASF. Note the modified tailskid and the realistic rigging.*

Civilianised 504K

I RECENTLY 'civilianised' the Airfix Avro 504K to depict G-EASF which flew almost continuously from its registration in 1919 until C of As for rotary-engined aircraft were withdrawn in 1935. A remarkable record by any standard, especially as this machine was used mainly for 'barnstorming'.

The only additional detailing is around the tailskid support which is apparent in the photo (*reproduced on this page*—EDITOR). Colour is Brunswick Green and White with aluminium panels aft of the cowling. Fuselage registration letters were from ¼ inch Yeoman transfers and the wing letters were cut from Yeoman solid green transfer sheet. All rigging is from Nylon monofilament ('Invisible Thread').

Peter L. Gray, Luton, Beds.

Lt Culley's Camel

CONGRATULATIONS on publishing Paul Leaman's article on Lt Culley's 2Fl Camel – a valuable contribution to aviation history.

Readers may like to have some details of its later life. During 1933 this machine was displayed on loan from the Imperial War Museum at the White City, Schoolboys' Own Exhibition from December 28 until January 13, 1934, when it was returned to Lambeth.

Some time before its acquisition by the Museum its armament had been changed to the single Lewis gun form it still retains.

During the pre-war period a blue band about two feet wide with narrow white edges encircled the fuselage aft of the roundel and I am fairly certain the under surfaces were then clear doped.

During the Blitz in 1940 this Camel was damaged when the Museum was bombed and subsequently placed in store. It was again on view in 1953 after a thorough restoration by 'riggers and experts from 1918' to quote press reports of the time, and was featured in the Royal Tournament that year.

The green dope was now rather lighter and a pale cream shade had been applied to the formerly green fuselage bottom to blend with the ageing remnants of clear dope.

The spurious serial number F3043 persisted on the white fuselage rectangle until being altered in the summer of 1955.

Not immediately evident to visitors is that wooden centre section struts now replace the original steel ones which were carried before the restoration.

An intimate detail not visible from the ground as exhibited, is the lettering on the airscrew boss 'Humber Ltd, England, B.R.1.150, 893. 37133', the last two numbers being boxed.

Peter G. Cooksley, Wallington, Surrey.

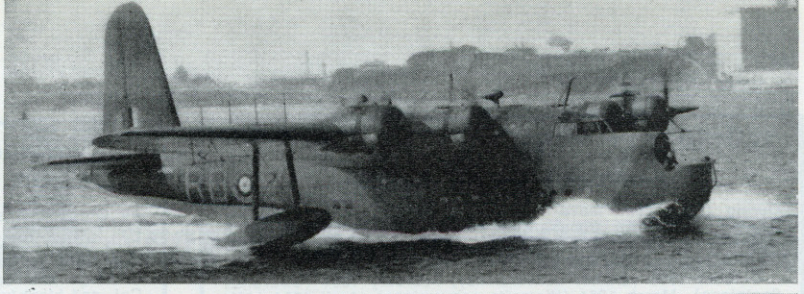
Leather finish

I HAVE a useful modelling hint for keen car enthusiasts who wish to produce a realistic leather finish for car seats. First paint the seats in the required colour using matt paint. When they are dry, take a tiny bit of Vaseline and rub it into the surface. As the matt paint is fairly porous, the Vaseline will be soaked up giving a nice leathery sheen. I have used this on most of my model cars and it looks most realistic, especially when used with black.

Jeremy S. Smith, Ashford, Middx.

photoPAGE

This month we present rare pictures of finishes and details applicable to Airfix kits. Captions by **Michael J. F. Bowyer.** A free Airfix kit is awarded for every picture published, but please note that there is usually a delay of some months before publication due to the limited space at our disposal.



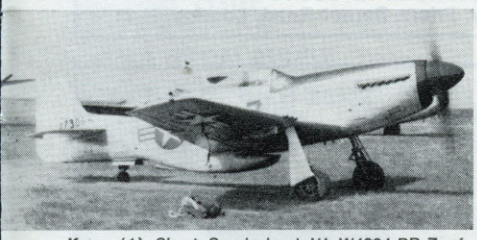
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Key : (1) Short Sunderland III W4004:RB-Z of 10 Sqn RAAF, 19 Group, at Mount Batten, Plymouth, in 1941. Aircraft was formerly with 201 Sqn. Note full ASV radar aerial array. (2) Walrus L2180 of HMS *Sheffield* in 1938 after removal from hangar for positioning on catapult. Silver with blue fuselage band. Both pictures by T. J. Leaman. (3) Canso 9766 of the RCAF with full ASV radar array. Behind is Anson L7054. Picture by Stuart Fairey. (4) P-51D (473066) of unidentified unit at Ruzyné aerodrome in Autumn, 1947, for Allied fly-past. Picture by Miroslav Balous.

HMS Warspite — from page 185

distinctive searchlight platform on the aft funnel is made to Fig 1h from $\frac{1}{8}$ inch balsa wood. The searchlight platforms abreast of the after funnel are of $\frac{1}{16}$ inch round plastic from the scrap box $\frac{7}{16}$ inch high. Anti-blast slits are cut $\frac{1}{8}$ inch from the bottom of each of these platforms. A small deckhouse 6 mm × 4 mm × $4\frac{1}{2}$ mm high fits between the funnels.

The aft deckhouse is now made to Fig 1j from $\frac{1}{4}$ inch balsa and fixed $\frac{3}{16}$ inch aft of the catapult, with a searchlight mounting from scrap and a small deckhouse from $\frac{3}{16}$ inch balsa with a rangefinder to Fig 1k on the top of this part.

The mainmast is now made and I used a spare *Cossack* foremast $1\frac{3}{8}$ inch tall with a copy of Part 115 on top of this. A spare *Cossack* mainmast 1 inch tall is now added on top of this and two small platforms from scrap are fitted to the lower part of the assembly, as shown on the layout diagram.

The boats can now be added, and the midship boats are fitted to instructions. I added brass funnels each $\frac{1}{4}$ inch tall × 1 mm diameter to boats 28 and 29 to represent steam picket boats, and mounted them in the inboard sets of holes drilled previously. Boats 57 and 58 are 'nested' inside boats 30 and 31 and fixed in the remaining sets of bolts

The boat handling derricks are made from stretched sprue, four of them $\frac{3}{4}$ inch long, and one 1 inch long. The shorter ones are mounted each side in the after end of the lower bridge platform and each side of the aft superstructure facing aft. The longer one faces forward and is mounted in the centre of the aft superstructure.

If an aircraft is required, it can be adapted from the Swordfish in the kit, or, if available, a spare Seafox from an *Ajax*.

The model is finished in medium battleship grey, and brass muzzles are added to the 15 inch guns, to complete a satisfying model.

Owing to severe pressure on space in this issue, book reviews are held over to next month. In addition, this month's instalment of the Churchill Tank series is curtailed but will resume its usual length next month.

In last month's new kit reviews we inadvertently gave the wrong price for Replica Decals' Gladiator/Fury sheet Z.4. It does, in fact, cost 7s 6d.

Guards — from page 187

are black.

The figure is constructed from the Lifeguard kit with the substitution of the Foot Guards head and bearskin. The bearskin requires building up with plastic putty, and the plume should also be formed of the same material. The body should be treated in exactly the same way as described for the previous figure. The right arm and glove require filing to hang in the position shown.

The belt, sword slings and straps supporting the sabretache are produced from narrow strips of white paper. The sabretache is made from a flat piece of scrap plastic, or from thick card. A full-size pattern for the sabretache was given on page 470 of our August, 1967, issue and I refer modellers to the same page and article for a drawing and details of the Brown Bess musket required for the 1830 Coldstream Guards sergeant described this month. It is necessary to scratch-build this weapon from heat-stretched sprue and/or plastic scrap as the Lee-Enfield rifle from the Airfix Guardsman kit cannot, of course, be used for the early nineteenth-century period.

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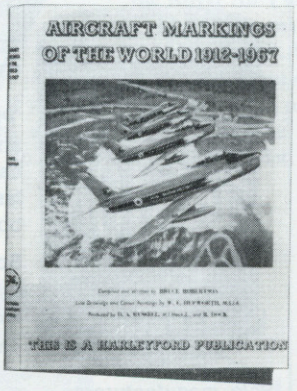
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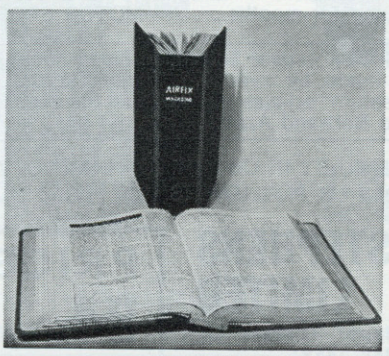
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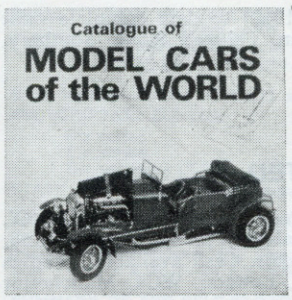
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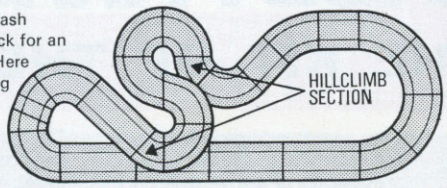
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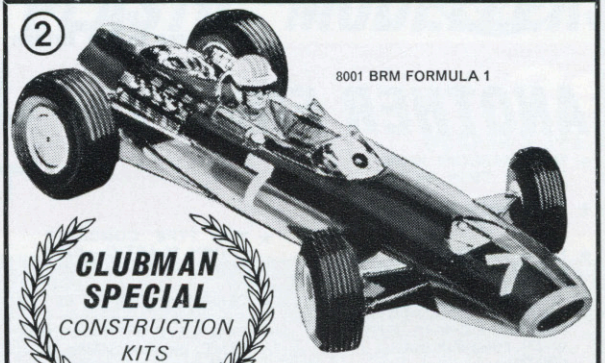


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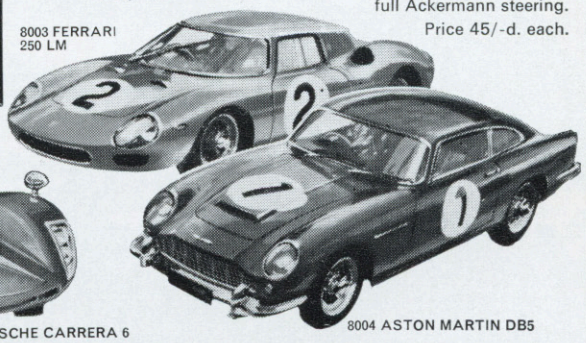
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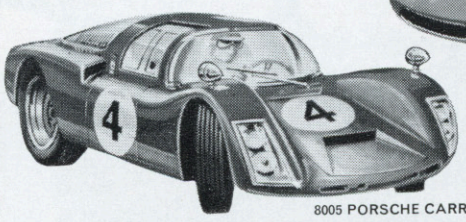


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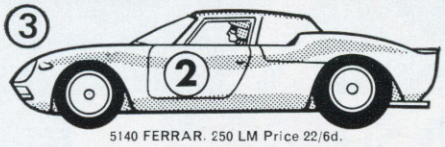
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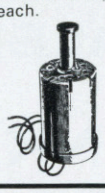
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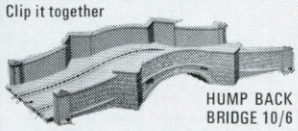
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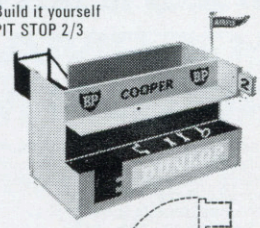
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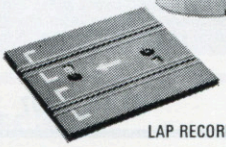
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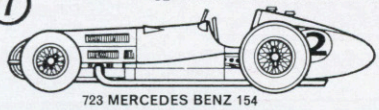
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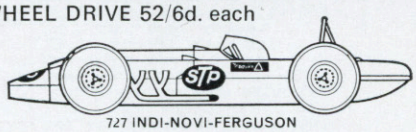


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